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THE LD/JD LINK: CAUSATION OR CORRELATION

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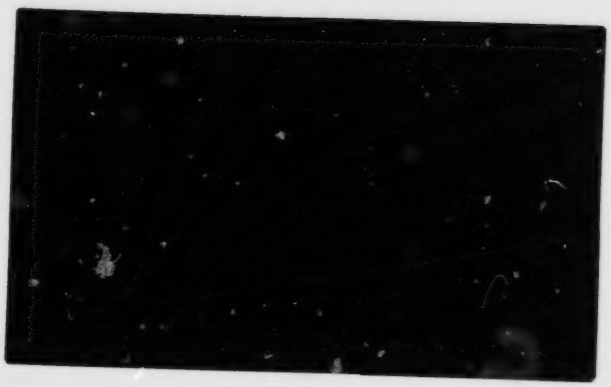

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THE LD/JD LINK: CAUSATION OR CORRELATION

NO. 1987-16

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A study to explore definition, incidence, assessment and program issues concerning the relationship between learning disabilities and Young Offenders in Canadian institutions that service the Young Offender population.

Chapter 1

Perspectives from the Literature

Rationale and Purposes of the Study

The passing of Bill C-61 (House of Commons of Canada, 1982) and its concern about both the most appropriate ways to both protect society and meet the needs of the young offender has led to a growing need to understand more about this population. It has become apparent that in spite of concern and resource allocation to them, few programme thrusts have been able either to prevent further criminal involvement or to rehabilitate many young offenders, (Shamsie, 1980, Crealock, 1979). This remains so even though there is increasing demand for such support such as that indicated in the recommendations of Child at Risk (1980), a report of the standing senate committee on Health, Welfare and Science which states

> "We recommend that the Federal, Provincial and Territorial governments encourage the development of needed community resources and services to deal with young offenders
> a) before they appear in court, to make a court appearance unnecessary; and
> b) when a court appearance is unavoidable, to provide viable alternatives in their disposition." p. 56

Trends at the provincial level also indicate a desire to find effective ways of providing appropriate alternatives for delinquent adolescents at the community level (Three Decades of Change, 1983) and these too have prompted government at all levels to look to increased alternatives for young offenders. This is reflected in The Young Offenders Act in the list of alternative dispositions that may be given in youth court. These include absolute discharge, fine, compensation to the victim in goods,

money or personal service, a community service order, treatment in a hospital or other appropriate facility, probation, or committal to intermittent or continuous custody.

One of the reasons that efforts to date have not met with the success hoped for is the dearth of predisposition information that would help the courts appreciate the individual needs of each young offender and thus recommend a programme more specifically tailored to these needs. This problem may be overcome with the full implementation of the Young Offenders Act since it does provide for the preparation of very full disposition reports that include general information about the young person's current behavior, maturity, and plans for the future, history of previous delinquencies, alternative measures, availability of community services, familial relationships and school and employment records. Whether specific programmes would be available if they were recommended is also at issue but it is difficult to argue for programme improvements without first identifying the necessity for them and the degree to which they do or do not exist in the local community.

One subgroup of the delinquent population that has begun to receive attention is the learning disabled young offender. Interest in this subgroup has been apparent for the past few decades but the extent to which this group exists among Canadian delinquents is difficult to determine. That most young persons appearing in court have had some difficulty in school is a reality widely recognized by the courts (Boyle, 1980, Varcoe, 1980). The role of learning disabilities in causing or exacerbating academic difficulties is not well recognized however. Definition of the learning disabled subgroup, incidence, identifying

characteristics and appropriate assessment are each controversial and the literature to date has not provided the courts with specific guidelines for practical use in identifying those young offenders whose illegal behavior is significantly influenced by their learning disability.

This study is an attempt to clarify these issues and to provide some specific suggestions for the courts concerning identification and programming for the learning disabled young offender both within the training school programmes and the community-based programmes. The specific objectives of the study are:

1. To examine the existing literature in the area of learning disabilities, especially as it applies to the young offender population. One note of caution needs to be introduced here. While 'young offenders' and 'juvenile delinquents' are generally felt to be terms that can be used interchangeably to describe youth who have been in trouble with the law, the specific meaning attached to 'young offender' in Bill C-61 in terms of age of youth and criminal act is not rigorously adhered to in the literature generally. In other words, some jurisdictions include a broader range of behaviors and age of offender to categorize a youth as delinquent. Both the concerns and the populations studied are similar to those of the young offender however and in this sense, the literature review includes studies pertaining to youth involved in delinquent behaviors whether or not they are as specifically defined as they are in Bill C-61.
2. To develop an inventory of the diagnostic tools available and to determine their current use in

Canadian clinics and institutions that service the young offenders.

3. To determine the existing approaches to programming in Canadian institutions which address the needs of juvenile deliquents with learning difficulties.
4. To suggest components of an assessment battery that will identify those young offenders whose delinquency is contributed to or linked with a learning disability.

Definitional Issues

The first issue to be explored in the existing literature is the definitional one. The Young Offender Act (1982) defines a young offender or "young person" as follows:

> "young person" means a person who is, or, in the absence of evidence to the contrary, appears to be
>
> a) twelve years of age or more, but
>
> b) under eighteen years of age or, in a province in respect of which a proclamation has been issued under subsection (2) prior to April 1, 1985 under sixteen or seventeen years, whichever age is specified by the proclamation, and, where the context requires, includes any person who is charged under this Act with having committed an offense while he was a young person or is found guilty of an offense under this act;" p. 2

In other words a youth between the ages of twelve and eighteen who commits a criminal offense as that is defined for the adult offender is considered a young offender and thus must take responsibility for his or her behavior although not necessarily to the same extent as the adult offender must. That definition is straightforward.

However the definition of learning disability is not so straightforward. Since 1963, when Dr. Sam Kirk coined the term to describe a group of students who in spite of normal aptitudes had serious academic problems, many groups have wrestled with a precise definition. The two most frequently cited ones currently are the one recommended by the National Joint Committee on Learning Disabilities (NJCLD) (Leigh, 1983) and the one adopted by the Canadian Association for Children and Adults with Learning Disabilities (CACLD, 1981). The NJCLD recommendation for the definition of learning disabilities is as follows:

> "Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g. sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g. cultural differences, insufficient/inappropriate instruction, psychogenic factors) it is not the direct result of those conditions or influences." p. 43.43

The following CACLD definition is similar:

> "Learning Disabilities is a genetic term that refers to a heterogeneous group of disorders due to identifiable or inferred central nervous system dysfunction. Such disorders may be manifested by delays in early development and/or difficulties in any

> of the following areas: attention, memory, reasoning, coordination, communicating, reading, writing, spelling, calculation, social competence, and emotional maturation.
> "Learning disabilities are intrinsic to the individual and may affect learning and behaviour in any individual, including those with potentially average, average, or above average intelligence.
> "Learning disabilities are not due primarily to visual, hearing or motor handicaps; to mental retardation, emotional disturbance or environmental disadvantage; although they may occur concurrently with any of these.
> "Learning disabilities may arise from genetic variations, biochemical factors, events in the pre- to peri-natal period, or from any other subsequent events resulting in neurological impairment." (CACLD, 1981, p. 5)

These definitions both include the three major aspects of most definitions of a learning disability, i.e. demonstrated difficulty in a core academic area or discrepancy between achievement and potential, reference to central nervous system dysfunction as a primary cause and an exclusion component that suggests that academic retardation is not due to emotional, intellectual or physical disabilities. These official definitions do differ however on the stress they place on central nervous system dysfunction as the primary cause. This difference will be referred to later as we discuss the causes of learning disabilities in greater depth.

The NJCLD and CACLD definitions are typical of the official attempts to define a learning disability and do represent those used by several authors (Swartz and Wall, 1978; OACLD, 1980, Florio-Forslund, 1977; Bernstein and Rulo, 1976; and Underwood, 1976). However an operational definition emanating from this official one would be that used by Raza and Haberl (1976) in a study done for the Quebec Association for Children with Learning Disabilities. In their study, they state that a learning disabled pupil must have a normal or above

normal intelligence quotient, demonstrate no emotional, physical or environmental handicap, show deficits in academic achievement relative to ability, show evidence of perceptual and/or perceptual-motor disorders and show the existence of a pattern of deficits in an otherwise normal profile.

Other definitions in the field are usually even more pragmatic. They tend to focus on the systematic problems that occur for a child with learning disabilities. Academic retardation is the most frequently mentioned one with additional statements suggesting normal or greater intelligence (i.e. excluding mental retardation as the reason for the academic retardation). Examples of the discrepancy plus exclusion approach to definition are those given by Reiter, 1982; Murray, 1976; Campbell, 1980; Broder et. al., 1981, and Keilitz, Zaremba and Broder, 1979 which suggest that the diagnosis should be accompanied by evidence to suggest that the learning disability cannot easily be interpreted as a manifestation of other handicapping conditions and which does provide evidence that a discrepancy exists between achievement and expectation.

The last approach to definition focuses exclusively on the discrepancy between achievement and aptitude aspect. Illustrative of this approach are the definitions given by Sawicki and Schaeffer, 1979; Trites, 1977; and Hallahan and Kauffman, 1982. Sawicki and Schaeffer have defined a learning disability as a discrepancy between intellectual potential and academic achievement and then have used this definition to classify delinquents who show a learning disability in terms of degree of severity. Mild learning disabled adolescents were those who showed a minimum of two grade levels of academic retardation while adolescents with

severe learning disabilities demonstrated academic retardation of four to six years. Hallahan and Kauffman have simplified the definition even further and state "a learning disabled child is simply one who is not achieving up to potential" p. 95. In approaching the issue this way they do not have to concern themselves with causality or exclusion of other handicapping conditions.

As can be seen the approach to definition varies greatly from those that include discrepancy, exclusion and causation statements to those which focus only on academic retardation. However, in closely analyzing all the definitions, the operational manifestation usually boils down to a measure of average or greater intellectual potential and evidence of academic retardation of two or more grade levels, usually in reading but also in writing or mathematics. As Coons, 1982 states:

> "while there may be neurological and other physical concomitants the important aspects of learning disability are the academic and social consequences of perceptual and integrative disorders." p. 252

Thus while we are sympathetic to the search for a highly specific definition of learning disabilities, the present 'state of the art' vis-a-vis definition suggests that a basic discrepancy between demonstrated achievement and potential is the only approach with any true applied concensus. This then is the one we will pursue in looking for the juvenile delinquency, learning disabilities (JD/LD) link.

Incidence

One of the more important reasons for the growing interest in the JD/LD connection has been the reports on incidence. While researchers

in the learning disabilities field itself have generally agreed on incidence rates of two to three per cent in the general population (Hallahan and Kauffman, 1982; Hewitt and Forness, 1983; Hamill and Bartel, 1981) they have also noted a range from one to thirty per cent depending on the definition used. However, in the delinquency literature, incidence rates have ranged from lows of 1 to 40 per cent (Sawicki and Schaeffer, 1979; Spreen-Offried, 1981; Murray, 1976; Keilitz, Zaremba and Boder, 1979; Zimmerman, Rich, Keilitz and Broder, 1978), to highs of 60 to 90 per cent (Murray, 1976; Podboy, 1978; Reiter, 1982; Swanstrom, Randle and Offord, 1981; Dalby, Schneider and Arboleda-Florez, 1982; Wilgosh and Paitich, 1982; and Berman, 1978). A crude average across these studies is approximately fifty-five per cent which is far in excess of what would be expected in the general population.

Again, however, one has to look at the operational definition used in various studies to account for the high incidence rates. Basically the assessment consists of a battery of intellectual and academic tests. Two of the more moderate estimates (Zimmerman et. al. and Sawicki and Schaeffer) found 37 and 33 per cent of the adjudicated delinquent populations they looked at had learning disabilities. In both cases large numbers of adolescents were initially screened according to school records and then those who showed high risk for learning disability were further assessed with psychological and education instruments plus full developmental and medical case histories and investigations of family functioning. Other investigators such as Wilgosh and Paitich (1982) in a

recent Canadian study, used a conservative criterion for learning disabilities of two years or more below grade level on achievement tests and found 61 per cent of males and 63 per cent of females, all of whom were at or above average on the intelligence measures used, to be learning disabled. Podboy and Mallory (1978) administered a battery of eight achievement, reading, perception, and intelligence tests and found nearly 50 per cent to be learning disabled on the basis of a severe discrepancy between achievement and expectation that was not due to handicaps in other areas. Swanstrom, Randle and Offord (1981) assessed 317 normal seventh graders and 128 adjudicated delinquents on a battery of intelligence, achievement and perceptual tests and found that 15.8 per cent of the normal population and 55.5 per cent of the delinquent population could be identified as learning disabled on the basis of academic retardation, exclusion of other handicapping conditions and observed deficit in one or more learning processes. The essential criterion for learning disabilities in each of these studies was the discrepancy between achievement and potential even where other personal attributes were tested.

In the adult population, Berman (1978) has reported 75 per cent to be learning disabled and Yeudall (1978, 1979, 1981, 1982) in Alberta has reported incidences of over 80 per cent. Both these investigators used variations of the Halstead-Reitan psychoneurological battery to assess their populations and found strong discriminant indices based on their assessment that could discriminate between learning disabled and non-learning disabled offenders. In most of their studies however, they are looking at a hard core group of inmates who had long histories of criminal behavior.

While such high incidence figures suggest a causal link between learning disabilities and juvenile delinquency, many investigators are cautious about interpreting their data that strongly. Murray (1976) found both confirming and disconfirming results in the literature concerning a direct relationship between the two which he concluded to be suggestive even though not strongly documented. He further suggested that the school failure-delinquency relationship is a complex and highly interactive one that requires careful study. Swanstrom et. al. (1978) also concluded that their data, though suggestive of a causal relationship, was in fact only correlational.

Both Murray and Zimmerman et. al. (1978) have pointed to the overlap in characteristics between learning disabled and delinquent adolescents but have suggested that this does not indicate a cause and effect relationship. In fact, in a very well reported series of studies (Zimmerman et. al., 1978; Broder et. al., 1981) that looked at 1005 public school boys and 687 adjudicated delinquent males they found no difference between learning disabled and normal adolescents on actual number of delinquent acts as revealed through a self-report process. However, almost twice as many learning disabled boys (33 per cent) were adjudicated as delinquent as were non-learning disabled boys (18 per cent). They suggest that the learning disabled adolescent is more at risk for adjudication because of the social and academic deficits that are part and parcel of his handicap not because he is more likely to engage in deviant behavior. This is a very interesting finding; one that must be looked at carefully by law enforcers and program planners.

The suggested discrepancy at adjudication may well effect an increased number of learning disabled adolescents in Canada whose offenses are processed by the youth justice system. In their Guide to the Young Offenders Act, Hardy, L. and Dunn-Worndl, B. (1983) recommend certain behaviors to the adolescent who comes before the courts. They include writing down everything you can remember prior to and during an arrest, remembering that you have rights and can use them, responding politely to officials, restraining tendencies to 'spill it all out', and clearly communicating with the court officer about your wants, ambitions, and goals. Most learning disabled adolescents have difficulties in all of these areas - their writing skills are poor, sequential memory is poor, they tend to be impulsive rather than reflective and only rarely can they organize their past, present and future hopes in a coherent manner. In addition to this, their predisposition reports often contain information such as poor school performance, immaturity, and inappropriate behavior that can work against them. Court officials will have to be careful to tease out inappropriate court behavior that is linked to a learning disability from that which is generally beligerant and defiant; not an easy thing to do in a busy courtroom.

The one last issue concerning incidence is the ratio of males to females found in the learning disability population. There are generally found to be four males to every female in the population at large (Hallahan and Kauffman, 1982; Hewitt and Forness, 1983). However the incidence studies here which looked at both male and female offenders, report a considerably reduced ratio that ranges from approximately 1 to 1 (Wilgosh and Paitich, 1982) to approximately 2 to 1

(Swanstrom, Randle and Offord, 1981). Whether this difference is the result of an LD/JD female being more likely to be adjudicated or whether it results from some causal link that results in a female with learning disabilities being more likely to behave in a manner that brings her to the court's attention is not clear from the reported data.

One must conclude from the incidence data reported above, that whether one interprets the learning disabilities-juvenile delinquency link as a causative relationship or not, there certainly is considerable overlap between the two conditions in terms of essential characteristics. The next few pages in this report will look at the characteristics of the two groups with a view to determining those that overlap most frequently.

Characteristics

When one looks at characteristics of the learning disabled adolescent and of the delinquent adolescent, there is a remarkable degree of overlap. In reviewing twenty-four studies describing this population, the characteristics fall into six major categories: academic, cognitive, psychoneurological, social, emotional and family related.

The most overwhelming shared characteristic is academic problems, usually involving retardation in one or more subject areas and attendance issues. According to the Young Offenders Act, attendance problems due to truancy are no longer considered delinquent acts and so the degree of overlap between the young offender and the learning disabled populations may be reduced. However, a large number of both populations have been shown to have serious academic problems with lags of two or more

years so this problem will continue to constitute a major area of overlap. Twelve studies (Murray, 1976; Reiter, 1982; Mauser, 1974, Leschied, Coolman and Williams, 1983; Phillips and Kelly, 1979; Griffin, 1979; Birkenmeyer and Polanski, 1975; Lambert and Birkenmeyer, 1972; Stephenson, 1973; Pihl, 1984; Thomas, 1981, Florio-Forslund, 1977) document this problem and describe its effect in terms of inability to meet school standards, communication problems between principals, teachers and students, repeated grades, academic problems beginning in the primary grades, lack of motivation, failure to see relevance of school success to their future, classroom behavioral difficulties and serious academic retardation of two to five years in basic subject areas for as many as fifty per cent of the delinquent population studied. Some authors feel this is symptomatic of juvenile delinquency while others suggest it is causative but all report the overlap. School attendance is a frequent problem for this group; however in the delinquent group it is usually referred to as truancy (Zieman and Benson, 1980) and is often a reason for adjudication, especially for females while in the learning disabled population it is more likely to be seen as absenteeism (London, 1984). While truancy is not an indictable offence under the Young Offenders Act, poor attendance increases the likelihood of poor academic achievement and it is a factor in the school histories of many young offenders and learning disabled youths.

When one looks at the adult criminal population, academic problems are often listed there as a significant characteristic of a large percentage of the inmates which suggests that the problem persists over time. Griffin (1979) found that the average inmate, upon arrival at the

penetentiary had only reached grade 6 with eight out of ten not finishing elementary school. Such limited academic experience was deplorable but in delving further into the academic skills of the populations studied, he found that 66 per cent were actually below claimed grade level. Thomas (1981) corroborated these findings. She reports that 78 per cent of inmates of Canadian penetentiaries have less than grade 10 as a declared educational level which is 30 per cent worse than the general Canadian population. She did not test actual academic levels but one could predict they would be lower than stated level given Griffin's results.

The second major category of overlapping characteristics is in the cognitive area. Here authors have reported a tendency to be impulsive as opposed to reflective in decision making (Murray, 1976; Koopman, 1983; Douglas, 1972). Murray has found an overlap between both populations on this characteristic while Koopman reports it in the adult criminal and Douglas in the learning disabled student. Murray and Koopman also report on an inability to learn from experience that is characteristic of the learning disabled offender. Other characteristics mentioned include poor understanding of cause and effect and confused verbalization (Koopman, 1983); poor organizational skills (Douglas, 1972); and poor problem solving skills (Schumaker, Hazel, Sherman and Sheldon, 1982). These cognitive deficits occur in spite of average intellectual skills (Mauser, 1974; Lescheid, Coolman and Williams, 1983; Stephenson, 1973; Lambert and Birkenmeyer, 1972).

Six authors have studied behaviors in the learning disabled youth that are identified primarily as indicators of psychoneurological problems. These include short attention span (Reiter, 1980; and Douglas, 1972);

difficulty following instructions, literal concrete thinking as opposed to abstract thinking and inconsistency of performance (Koopman, 1983); inflexibility (Pihl, 1984); spatial problems and greater occurrence of minimal brain damage (Mauser, 1974) and faulty time concepts involving an inability to project themselves into the future or to defer gratification (Underwood, 1976; Kronick, 1983). These have been reported for learning disabled young offenders by several investigators (Koopman, 1983; Yeudall, 1979; Murray, 1976). In each case, the learning disabled and young offender populations studied showed more of these characteristics than would be expected from general population incidence.

The fourth category of characteristics that show significant overlap between learning disabled and juvenile delinquent populations is adequate social skills. The specific characteristics mentioned here are poor understanding of social cues (Murray, 1976; Foster and Bernstein, 1979); poor social conversation skills (Schumaker, Hazel, Sherman and Sheldon, 1982); propensity to say irrelevant or inappropriate things (Koopman, 1983); inability to give or receive positive and negative feedback or to negotiate with peers (Schumaker et.al., 1982), peer acting out and socially isolated behaviors (Lescheid et.al., 1983) and generally poor peer relations (Pihl, 1984). Some of these behaviors also indicate problems in cognitive function but because they relate specifically to interaction with others, they are listed under social skill deficits. Much work has been done with learning disabled adolescents (Kronick, 1983; Bryan, Donohue and Pearl, 1981) to corroborate the high frequency of social deficits among this population.

The next category of characteristics are those that fall into the emotional area. These tend to be reported more often for young offenders, especially the more serious and pervasive descriptors but there is some overlap. Overlap has been reported for negative self-concept (Mauser, 1974; Pihl, 1984; Florio-Forslund, 1977), and low frustration tolerance (Mauser, 1974; Florio-Forslund, 1977). Kronick (1983) has reported emotional immaturity that translates into egocentricity and an inability to understand the other's point of view in the learning disabled population which is not unlike some of the social deficits earlier reported for young offenders (Murray, 1976; Schumaker et. al., 1982; Koopman, 1983). The more serious indicators of emotional problems however have been found primarily in the delinquent population. These include having received psychiatric help in the community prior to adjudication (Lescheid et.al., 1983, Birkenmeyer et.al., 1975), a tendency to be involved in self-destructive behaviors, to act out against authority and to have experienced a large number of serious stressful events (Lescheid et.al., 1983) and a general description of being emotionally disturbed (Stephenson, 1973; Burns, 1976; Lenz et.al., 1980). Stephenson's paper tried to debunk the myth that young offenders are emotionally disturbed and though her data did show that many were not, she did find a range of 16 to 85 per cent of the delinquent populations in the three groups she studied showed emotionally disturbed behaviors. The larger percentage was found in a training school population that did conform to many of the stereotypes of the young offender, i.e. emotionally disturbed (85%), in the dull normal range of intelligence, reading skill two or more years below grade level, lower SES and poverty in the family background (57%), and high incidence of family breakdown (67%).

This leads into the final group of characteristics; those that relate to family background. These characteristics have been found to describe the young offender group almost exclusively. In fact Hurwitz, Bibace, Wolff and Roubotham, 1972 have suggested that delinquency is a lower class problem while learning disabilities is a middle class problem. Certainly there is some overlap but poverty and family breakdown are more frequently associated with an adjudication of delinquency (Hurwitz et.al., 1972, Stephenson, 1973; Lescheid et.al., 1983, Burns, 1976; Lenz et.al., 1980) than with a primary diagnosis of learning disabilities.

In describing a typical resident of a Canadian training school, Winzer and Bennett (1980) state the following:

> "He or she is an adolescent who has failed once or twice in ordinary school, who has been a behavior problem in the elementary grades and who has transferred to high school because the lower school lacked the resources to devote any more attention to this troublesome, cantankerous and potentially dangerous youngster." p. 6

The characteristics summarized in this section would concur with their description but would also flesh out some aspects. The most typical young offender according to this review of the literature is a male who has experienced serious academic failure beginning in the early grades which has resulted in two or more years academic retardation in the core subjects of reading, writing and mathematics; who shows cognitive deficits in his ability to solve problems and appreciate cause and effect relationships; who shows problems in attending to relevant stimuli and tends to be impulsive; who has a poor understanding of social situations which result in poor peer interactions; who has a

history of emotional and aggressive response to frustration and who frequently comes from a lower class family that has experienced considerable stress and breakdown.

However, while this may be a description of the most typical adolescent in a training school and, with the exception of the emotional and family descriptors, a description of a typical learning disabled adolescent, the issue of overlap of characteristics versus causation of the problem still remains. That the learning disabled and young offender populations share many characteristics seems to be well documented in the literature; that the one causes the other to still an open question. In the next section, we will look more carefully at this issue.

Causation

The etiology of learning disabilities and its connection with juvenile delinquency is exceedingly complex. This review will look at the question from four perspectives: sociological, environmental pollutants, biochemical and neurological. A major proponent of the sociological approach especially as it concerns familial interaction is Minden (1977) who makes a strong case for the importance of parental training and involvement. He suggests that the learning disability can precipitate stress and tension in the parents and that this can have a reciprocal effect on the learning disability. He goes further to link this stress to the development of neurological and processing deficits at both prenatal and postnatal stages of development. Lane (1980) and McKay and Brumback (1980) both suggest that a learning disability makes the adolescent more susceptible to deviant behavior. If a student rejects and is rejected by social institutions like the school, he or

she may seek out alternate stimulation. However there is not much literature to support this theoretical relationship between learning disabilities and juvenile delinquency.

Environmental pollution is the second aspect of causality in the learning disability, young offender link. Investigators who explore this issue have looked at various substances such as lead (Lin-Fu, 1982; Pihl, 1977; Needleman, et.al., 1979); aluminum (Rees, 1979) and other minerals and trace elements (Rimland and Larson, 1983) to determine the extent to which they are found in the systems of various groups. Lead has been the most widely publicized pollutant with concern leading to the use of lead-free gasoline and paints plus many cautions at both the governmental and industrial levels. In a major study of all the grade 1 and 2 children in a school district during the years 1975-1978, Needleman et. al. (1979) collected lost primary teeth from 3329 children and examined them for elevated dentine lead levels. These authors had criticized earlier research that had looked at blood levels as being too susceptible to short term individual differences and as being inadequate markers of exposure to lead. Dentine lead levels however, reflect build-up over many years and so are a more reliable measure of the effects of long term exposure. From the initial large group, the investigators found 100 with low lead levels and 58 or 1.4 per cent with high lead levels. Educational, psychological and sociological measures were obtained for the 158 children. There were significant differences between the high and low lead groups on the WISC-R full scale intelligence quotient on verbal IQ, auditory processing and reaction time tests. In each case, the low lead group performed better than the high lead group. There were also

differences on teacher rating scales on distractibility, persistency, dependability, impulsivity, ease of frustration, daydreaming, ability to follow directions and low overall functioning. There were also differences on father's education and social class with high lead level children coming from lower SES families. Lin-Fu (1982) also looked extensively at lead levels and found that there were marked differences in lead levels for race (2 per cent in whites versus 12.2 per cent in blacks), community (2.1 per cent in rural versus 11.6 per cent in the inner city) and social class (1.2 per cent in middle class groups versus 10.9 per cent in lower class groups). She further found that the family situation most frequently associated with high lead levels included marital separation, unemployment, absence of parents, high number of preschool children in family, lack of stimulating environment, and an inability to cope with the stressful city life. In both these studies, many of the characteristics associated with high lead levels in individuals are similar to those found in the delinquent adolescent who has a learning disability.

Two other studies in the environmental pollution area deal directly with the young offender population. Rees (1979) had a hair analysis done on 595 patients of all ages and found 74 per cent with elevated aluminum levels. Among ten delinquent and psychotic boys who were looked at separately, 100 per cent showed elevated levels. While this subsample was quite small, the overall results do point to high aluminum levels as a potential factor in learning disabled and young offender populations. He attributed the generally high incidence to the use of aluminum cookware, processed foods and treated water. Rimland and Larson (1983), in a review of 51 studies, found both the learning disabled and

juvenile delinquency groups to show high levels of cadmium, lead, and copper while the learning disabilities group also showed high levels of manganese which the juvenile group were deficient in. The young offender group also showed high levels of aluminum, magnesium and calcium which the authors felt might be due to their large intake of milk which was twice that of the normal adolescent population.

In summary, it would appear that there is a greater likelihood of both learning disabled and juvenile delinquent adolescents to show higher than normal lead, copper, and aluminum levels than that found in the normal population. However, while these findings are important, the cause:effect relationship cannot be assumed since the studies reported were essentially correlational. It may even be true that high levels of minerals and trace elements in the body do cause hyperactivity and attention deficits but the meta problem may be the poverty and poor familial situations that are also found among children whose mineral levels are high.

The third approach to causation that will be examined in this paper is the biochemical one. This includes those studies that have looked at diet, vitamin therapy, and at medication. One of the interesting new aspects of the problem is the growing awareness of the relationship between diet changes and hyperactivity in children. As our diet includes more artificial food dyes, more artificial sweeteners and more sugar generally, there is a steady increase in the numbers of reported cases of children with learning disabilities which some researchers (Feingold, 1974; Sabo, 1977) have suggested are causally related. Benjamin Feingold has developed a special diet that excludes all foods containing artificial dyes or sweeteners. He cites many case studies where children on his diet have

improved in both general behavior and academic achievement; he says that if children will adhere to it faithfully, their hyperactive symptoms disappear. Recent reviews (Mattes, 1983; Kavales et.al., 1983) have cast considerable doubt on the degree to which the Feingold diet improves the children's behavior, but Rimland (1983) is more positive. He criticizes the negative reviews of the Feingold diet on the basis of the irrelevancy of many of the reviewed studies stating that only ten dyes have been studied when Feingold had identified 3000 additives that have been placed in our foods; ridiculously small dosage levels (1.6 to 26 mg per day when the daily consumption of colorings is 59 to 76 mg. per day; failure to control relevant variables such as copper, lead and polluted light and inadequate attention to animal and in vitro studies. He concludes that with the increase in youth crime and decrease in academic ability, we would be foolish to ignore Feingold's message; instead we should do what we can to remove unnecessary additives and pollutants from our food supply and daily diet.

Another area of growing interest is the relationship between a child's ability to tolerate and absorb glucose into the blood stream and hyperactivity. Langseth and Dowd (1978) found that 88% of the hyperkinetic children in their clinic showed abnormally low glucose tolerance levels. They reduced the amount of sugar (both artificial and natural) the children were receiving and found improvements in activity level and learning in all of the children.

Hippchin (1976) states that delinquency and criminal behavior is related to nutritional experiences. He cites work by Hoffer that suggests four major symptoms that result from biochemical disorders;

perceptual changes due to nutritional disorders, perceptual changes due to brain allergy, hyperactivity due to nutritional deficiency, and hyperactivity due to hypoglycemia or low blood sugar. Work at the Saskatchewan penetentiary showed that one third of the inmates had perceptual problems due to brain allergies related primarily to foods in the wheat, corn and milk groups.

In a major study that looked at 300 articles concerning the effects of nutrition on behavior in offender populations, Lomp, Stasiak and Quirk (1979) suggest that while some of the evidence is inconclusive, there is enough to suggest that the offender population does suffer from a high incidence of nutrition related disorders and that when potential perpetrators of delinquent acts are in nutritional distress, they are more likely to commit a crime than when they are not.

The effects of both diet and megavitamin therapy were studied by Hershner and Grekin (n.d.). Seventeen boys and three girls between the ages of 7 and 14 were assessed for intelligence, and for educational and neurological skills. They were divided into two groups on the basis of intelligence and age; one group received a nutritional diet plus vitamins, and the second was on the diet alone. After a six month period, there was no difference between the two groups. However, both improved significantly on home discipline, attention span, reduced aggressiveness and hyperactivity. The authors conclude that while both improved on the diet, there were no additional gains made by the addition of megavitamin therapy.

In the past decade, the use of drugs to treat hyperactivity in children has become increasingly popular. This seems to be occurring because we as a society are more likely to turn to drugs to solve many

physical and psychological needs and because some children do respond positively to drug therapy (Knights, 1974, Swanson and Kinsbourne, 1978; Kinsbourne and Caplan, 1979). Interestingly enough, hyperactive children seem to respond more positively to stimulants than to tranquilizers. Studies report that hyperactive children show a decrease in activity level and an increase in attention and acceptable social behavior when they are on drug therapy.

The drug most frequently used in treating children with learning disabilities is methylthanadate (Ritalin). At the Hospital for Sick Children in Toronto, extensive studies are being done to determine which children respond well to Ritalin and what are the optional dosages. Swanson (1979) reports that sixty (60) per cent of children diagnosed as hyperactive on the Connors Scale showed increased performance on a paired associate type task when they were on Ritalin as opposed to being on a placebo. They also showed decreased impulsive activity and some increase in attention span. The remaining forty per cent showed the reduced activity and distractibility but they did better on the task in the placebo condition. Both groups indicated positive behavior effects from the ingestion of pills but unfortunately there wasn't a control group who did not injest pills with which to compare.

Williams, Cram, Tausig and Webster (1977) studied 28 children in a double blind study that looked at medication and diet. Their outcome measures were ratings of childrens' behavior on an eleven item and forty item checklist for teachers and parents respectively which had been developed by Connors. They found that both parents and teachers rated the children's behavior improved when they were on drugs while the diet had

minimal effects according to the parents and positive effects according to the teachers.

While there certainly are many champions of drug therapy, there are also an increasing number of investigators who are indicating that all is not well in the state of drugs. Walker (1974) reported on many case studies where children who were on Ritalin were in fact suffering from fairly serious physical problems (heart defects, low levels of calcium in the blood, mild seizures) that were masked by the drug. Had these children not be re-examined not only would their hyperactivity have increased but their physical conditions would have seriously deteriorated.

New data is being reported that suggest possible addiction effects from long term usage of stimulants. Medical practitioners are well aware of the addicting aspects of diet pills (which are similar to Ritalin) and are becoming more careful in recommending their use to adult patients. Such caution does not seem to be exercised as stringently in prescribing for children however (Walker, 1974; Bornstein and Blouin, 1978). Bornstein and Blouin did a follow-up study on a group of children who had been on drug therapy for five years. At the time of follow-up, these children were all in their middle teens and showed more anti-social delinquent behavior and a greater propensity for alcohol abuse than did a control group of children with learning disabilities who had not been on drug therapy.

To summarize, the studies on diet, vitamin therapy and drugs do indicate some relationship between nutrition and learning disabilities and juvenile delinquency. Most of the relationship however seems to involve the importance of a good, well-balanced, nutritional diet that avoids excesses of sugar, milk and wheat products which is not typical of the

eating habits of many delinquents. This our mothers would agree with. But the dramatic cause and effect relationship between certain foods and learning and behavioral difficulties that is cited in the case history literature, is not clearly demonstrated in either the learning disability or young offender populations per se. A final note of caution should be made here however in seeing biochemical treatment approaches as the disposition of choice for a young offender. That is the necessity for the young person to agree to treatment that is mandated in Section 22 of the Young Offenders Act. This concern is one that is potentially problematic in terms of any treatment approach to rehabilitation that is considered by the youth court.

The final area of causation that has been widely investigated is the relationship between minimal brain damage, learning disabilities and juvenile delinquency. A major series of studies have been done in Alberta to investigate the relationship between criminal behavior and psychoneurological difficulties (Yeudall, et.al., 1978; Yeudall, 1979; Yeudall et.al., 1981; Fedora and Fedora, 1982; Yeudall et.al., 1982). These authors have looked at public school children, young offenders and persistent offenders to try to understand the prevalence, type and effects of brain dysfunction. Yeudall, Tuokko, Tuokko and Battle (1978) looked at 193 school children between the ages of 9 and 14. Sixty-eight were in special education classes for the learning disabled (the E1 group), 60 were in regular class but had been referred for assessment (the E2 group) and 65 were functioning normally in regular class (the C group). All were given an extensive test battery consisting of neurological, neuropsychological, intellectual, academic and personality measures. In the two experimental

groups, brain dysfunction was found in 56.7 to 92.3 per cent, while it was found in only 13.8 per cent of the control group. The brain dysfunction was primarily localized in the left or dominant hemisphere. In a second study with 99 adjudicated delinquents and 46 controls matched on age, Yeudall (1979) found that 84 per cent of the delinquents and 12 per cent of the controls had abnormal neuropsychological profiles. He also found that this population of delinquents had a higher incidence of head injury, periods of unconsciousness, abnormal EEGs, stammering, convulsions, learning disabilities and left handedness. Among the 84 per cent of delinquents who showed brain damage, virtually all (99 per cent) had the damage localized in the anterior region of the brain which is the area where programming, regulation and verification of behaviors is located. The authors state that these results suggest delinquents may have problems planning their actions, perceiving their consequences and changing the course of action once begun even when this would be appropriate, which is reminiscent of the cognitive deficits found in young offenders stated earlier. Mauser (1976) indicated that minimal brain damage is found more often in both the learning disability and delinquent populations and more often in males. Yeudall (1979) suggests that males have a more vulnerable dominant hemisphere during their developmental years than do females and that injury to it can result in disruptions in the role of language in the development of foresight or anticipation of the consequences of deviant behavior. He also suggests that bilateral brain dysfunction localized to the anterior brain area is most likely to result in impairments with limited compensation since parallel systems don't exist and that early bilateral dysfunction can lead to behavioral and specific academic deficits. Yeudall, Fedora, Fedora and Wardell (1981) further state that

> "Our view is that the biological impairments often found with persistent criminals are not necessarily just concomitants of their criminal careers or unrelated ramifications of their psychosocial environment, but in many incidents are antecedents and contributory to the initiation and continuation of criminal activity." p. 131.

The work done by Yeudall and his associates strongly suggests a cause and effect relationship between minimal brain damage, learning disabilities and delinquent behavior. However, they argue that while brain dysfunction is a necessary factor in the development of persistent criminal behavior, it is not a sufficient factor. But, when coupled with lower SES, the delinquent behaviors may emerge. He suggests the following scenario.

> "Significant brain disfunction in the early developmental years of the child could have detrimental effects regarding their emotional and cognitive intellectual adaptive abilities. Thus, such individuals would experience greater difficulty in forming normal psychosocial relationships with their family and peer groups, as well as failure in school. These failures would inevitably lead to subtle as well as obvious pressures and discrimination from teachers, parents and peer acquaintances. This reaction by others to the student's direct failure would result in additional secondary frustration and emotional turmoil. Thus an insidious nexus of etiological factors provides the determinants for a vicious circle which is biologically based, but emerges at the surface as being a psycho-sociological problem, particularly for the lower socioeconomic levels of society. The failure to correctly diagnose at an early stage the student's specific disabilities and--possibly more important--their remaining adaptive functioning abilities would set the scene for misinterpretation, not only by others but by the students themselves of the factors involved in the genesis of the student's deviancy." p. 23.

Strong as Yeudall's evidence appears, it is not without its critics. Trites (1977) has argued that there is no single cause of criminal behavior and that the relationship between brain disfunction, learning disabilities and criminal behavior is that the former are risk factors for anti-social

behavior. Other investigators (Gaddes, 1980; Krynicki, 1978; Post, 1981; Rasmussen et.al., 1980) however, also report on the positive relationship between brain damage, learning disabilities and delinquency. Krynicki (1978) found that male adolescents with a history of multiple assaultive incidents and males with diagnosed organic brain damage were very similar with both showing abnormal EEGs. Rasmussen, Gillberg, Waldenstrom and Svenson (1980) screened 3448 Swedish seven year olds and found 82 or 2.4 per cent had symptoms of attention deficit. When compared with a control group on an extensive battery of neurological, medical, and psychological factors, these children showed significant differences in speech and language function, oculomotor function, poor eye-hand coordination and perceptual function. The authors concluded that this group did show signs of minimal brain damage and could be described as having a 'clumsy child syndrome'.

Two investigators (Kinsbourne and Hiscock, 1978; Bannatyne, 1979) caution against an overinterpretation of the findings on minimal brain damage. Both speak to the incidence found naturally in the normal population and suggest that investigating clinical populations per se can lead to unwarranted conclusions since by definition those populations are high on many indices of dysfunction. Bannatyne suggests that learning disabled students may have brains with a dominantly spatially organized right hemisphere. However, this is neurologically normal since both left and right hemisphere dominance occur in the normal population. The problem however occurs because the academic world forces an individual to be competent in the realm of alphabetic symbols which is a left brain activity. A final caution comes from the work of Duane (1982) who suggests

that while investigations of minimal brain damage are interesting and in some cases suggestive of a cause and effect relationship, they at best produce 'soft' neurological signs and cannot replace good psychometric and educational assessment in understanding and planning for the learning disabled student. It would appear then that while the presence of minimal brain damage is often coincident with both learning disabilities and delinquent behavior, minimal brain damage by itself cannot be said to cause either.

The issue of causation is very complex. This review suggests that while a learning disability may put an adolescent at risk for delinquent behavior, there is not a simple one-to-one relationship. In addition, it is very difficult to point with certainty to any other single cause of either condition. The individual most at risk for delinquent behavior seems to be one who comes from a low SES family, lives in an area prone to environmental pollution, eats a nutritionally poor diet and has social and academic problems at school and in the community at large. All of these factors would seem to contribute to the cause of delinquent behavior; most of them also contribute to the cause or etiology of learning disabilities.

Assessment

Twenty-four studies that explored the juvenile delinquency, learning disabilities link were reviewed for assessment instruments that had been used to either diagnose, describe or plan for the population studied. In the previous section, characteristics of this group were discussed in terms of academic, cognitive, psychoneurological, social and emotional and family related. These groupings will be used again in looking at the assessment

instruments used to characterize the young offenders in these ways. One other category of assessment will be added however. In the characteristics section, intelligence per se was not mentioned, perhaps because by definition this group is of supposedly average ability but in the assessment literature, intellectual testing is very significant.

Of the studies reviewed, seventeen (Wilgosh and Paitich, 1982; Groff and Hubble, 1981; Weiss et.al., 1980; Hogenson, 1974; Yeudall et.al., 1978; Lescheid, Coolman and Williams, 1983; Swanstrom et.al., 1981; Miller et.al., 1981; Bachara and Zaba, 1978; Broder et.al., 1981; Keilitz et.al., 1979; Sawicki, 1979; Berman, 1978; Swartz and Wall, 19 ; Campbell, 1980; Barrows, n.d.; and Raza and Haberl, 1976) cited the Wechsler intelligence tests, either the WAIS-R or WISC-R, as a primary component of their assessment battery. In a few cases there was an attempt to use the scores and profiles clinically but generally the test was used as a straight IQ measure. While most authors found their population to be in the average IQ range, when that range or mean was reported, it was usually in the low average range for full scale IQ (Lescheid et.al., 1983) or low average range on the verbal subtests (Yeudall et.al., 1978). Yeudall has even suggested that performance on certain WISC-R sub-tests--information, arithmetic, digit span, picture completion, object assembly and coding is a powerful discriminator between normal and retarded academic achievers whose academic performance on the Wide Range Achievement Test (WRAT) is diagnostic of brain dysfunction. The positive relationship between intelligence and achievement has been well documented (Woolfolk and Nicolich, 1984) but Yeudall does attempt to add to our understanding of this relationship. The one other ability test mentioned was the Raven's

Progressive Matrices (Wilgosh and Patrick, 1982; Yeudall et.al., 1978) which has the advantage of being non-verbal. It has formed part of the LPAD (Feuerstein, 1979) assessment battery and has been used in instrumental enrichment programmes.

Many of the tests measured academic achievement. The most widely used one is the Wide Range Achievement Test (WRAT) which gives a grade equivalent on reading decoding, spelling and computational mathematics. Nine investigators included this as part of their basic battery. Other achievement tests mentioned were the Woodcock Reading mastery test and KeyMath tests which were used by five investigators; and the Durrell Analysis of Reading Difficulty, Stanford-Achievement Test and Peabody Individual Achievement Test which were each used by one author. Previous school records were mentioned by two investigators. Most investigators were interested in how their populations scored on the basic academic skills and used this information both diagnostically and in programme planning.

Tests to measure cognitive abilities were used by five investigators (Ross and Fabiano, 1981, 1983; Koopman, 1983; Lescheid et.al., 1983; Broder et.al., 1981 and Barrows, n.d.). The most frequently used test was Witkin's tests for field dependence-field independence cognitive style which were mentioned three times. In a major study of assessment and remediation approaches for young offenders, Ross and Fabiano (1983) suggest that the following functions should be tested: self control, social perspective-taking, concrete-abstract thinking, interpersonal cognitive, problem solving, locus of control, field dependence-independence, conceptual rigidity, critical thinking and empathy/role taking. The tests

they suggest as good measures for these functions are available commercially but they are not frequently used by most investigators. Koopman (1983) did not use traditional tests to determine deficits in cognitive processing. Rather she developed a list of criteria which included difficulty following directions, literal thinking, difficulty assessing the relative importance of events, poor cause and effect relationships, confusion and bewilderment especially during verbal discussion, impulsivity, propensity to say inappropriate things, lack of insight into behavior of self and others, inconsistency of performance and inability to predict consequences of behavior. From these criteria plus other measures of intelligence, language, cognition, achievement and personality, she was able to determine three groups who showed serious difficulties in cognitive competence and syntactic complexity.

Psychoneurological tests are used as part of the test battery in nine investigations (Berman, 1978; Deling, 1978; Yeudall et.al., 1978; Barrows, n.d.; Raza and Haberl, 1976; Broder et.al., 1981; Keilitz et.al., 1979; Campbell, 1980; and Swanstrom et.al., 1981). The most frequently used test was the Bender Visual-Motor Gestalt Test which six investigators used. It measures visual-motor coordination and when scored according to Koppitz (1963) gives an indication of minimal brain damage. The Halstead-Reitan Battery was used in three studies, two of which (Berman, 1978 and Yeudall et.al. 1978) found it to discriminate highly between delinquents and normal adolescents with learning disabilities. Yeudall and his colleagues have adapted the battery somewhat to include the following subtests: aphasia screening, oral word frequently, written word frequency, seashore rhythm, speech sounds perception, Raven's colored progressive

matrices, Trail Making-A & B, Symbol Gestalt, Halstead category test, Wisconsin card sorting, Minute Estimation, dynamometer, finger tapping, Purdue pegboard, tactual performance test, finger localization, finger-tip number writing, tactile form recognition, L-J recognition, laterality questionnaire, name writing and Memory for Designs. Additional tests in their battery include the WISC-R, WRAT, Durrell Analysis of Reading Difficulty, Canadian Self-Esteem Inventory for children and power spectral EEG battery. The total time required for assessment on their tests is eight hours. The six WISC-R subtests mentioned previously plus speech sounds perception, seashore rhythm, Wisconsin card sorting and symbol gestalt yielded 95.08 per cent correct classification of learning disabilities. It would be useful if Yeudall would use only these subtests as a check on their discriminant ability. An eight hour battery is beyond the scope of most investigators but the reduced battery would not be. Unfortunately however, although Yeudall et.al. have conducted several studies since the one reported above, they continue to use the full battery and use EEG results to validate their minimal brain damage findings.

One of the serious problems with using psychoneurological tests is their questionable validity and reliability as diagnostic instruments (Coles, 1978; McIntyre, Keeton and Agard, 1981). The most frequently used test among those reported above is the Bender Visual-Motor Gestalt (BVMGT). Salvia and Ysseldyke, 1981 in their text entitled Assessment in Special and Remedial Education state that

> "reliability for the BVMGT is relatively low, at least too low for use in making placement decisions....Validity for the BVMGT is currently not clearly established. The authors have not empirically demonstrated that the test measures visual-motor perception or that it discriminates individual cases of brain injury, perceptual

> handicaps or emotional disturbance. The test certainly provides a very limited sample of perceptual-motor behavior, and for this reason of no other, one would have to be extremely cautious in interpreting and using its results." p. 353

This test is however, a very frequent component in the learning disability test battery primarily because it is quick to administer and easy to score. The Halstead-Reitan battery, by contrast, has been able to predict the location and extent of brain injury (Reitan, 1966) but it is rarely used because of the length of time needed for administration and the necessity for skillful interpretation.

Thus although psychoneurological tests are often part of a test battery when the relationship between juvenile delinquency and learning disabilities is being explored, one must interpret the results very cautiously.

Social and emotional tests were part of the assessment batteries of six investigators (Lescheid et.al., 1983; Barrows, n.d.; Broder et.al., 1981; Hogenson, 1974; Yeudall et.al., 1978 and Raza and Haberl, 1976). The tests reported are each used by one investigator. They include the Basic Personality Inventory, behavior checklists, Minnesota student aptitude inventory, Rokeach Dogmatism Scale, Bennett Self-Esteem Inventory, Canadian Self-Esteem Inventory for Children, and the Goodenough-Harris Drawing Test. There is obviously interest in obtaining a personality measure on young offenders but there is little concensus on any specific instrument in the literature.

Five investigators (Berman, 1978; Lescheid et.al., 1983; Barrows, n.d.; Peling, 1978; and Hogenson, 1974) used interviews and extensive family histories to assess their populations. Lescheid, Coolman and

Williams (1983) looked at involvement with community agencies, stability of family structure, emotional indices, school history, alcohol and drug abuse and stressful events to help characterize the delinquent population they investigated. McLoughlin and Netick (1983) suggested that assessment batteries should look at genetic issues, diet, allergies, and medical history but these topics did not rate highly among the investigators reviewed here as ones to be looked at seriously.

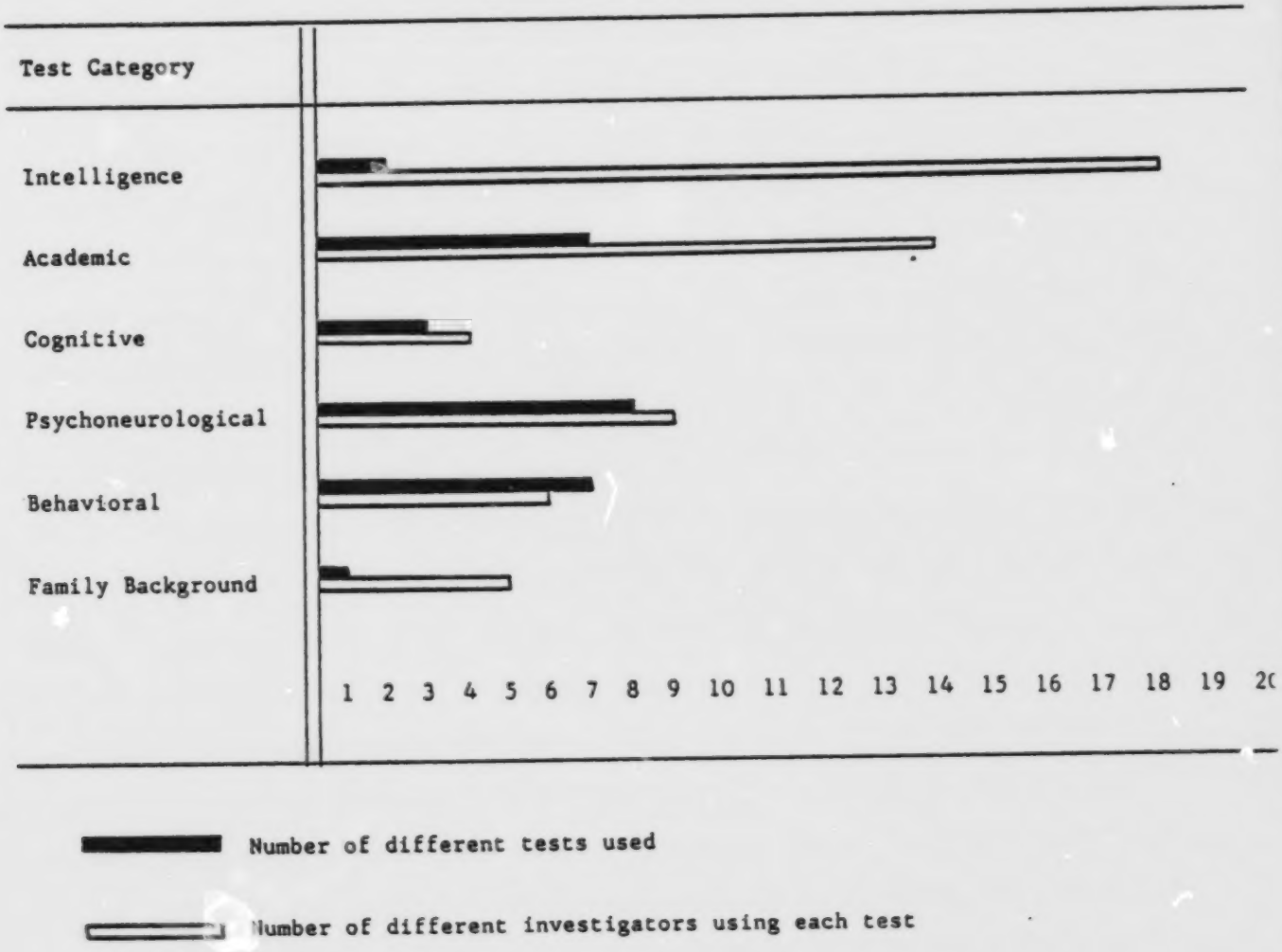
Figure 1 summarizes this section on assessment. It visually illustrates the concensus on both category of test and specific test among investigators for intelligence and academic areas.

Insert Figure 1 here

This tends to confirm the operational definition of learning disabilities that was suggested earlier, that is, an individual of at least normal intelligence who is not functioning academically as well as is expected. Other test categories are used by investigators but as Figure 1 shows, there are as many tests as there are investigators with little concensus on a preferred or best test to measure the behaviors of interest.

Figure 1

The Number of Different Assessment Instruments Used
by Different Investigators of the Learning Disabled Juvenile
Delinquent Population


Test Category
Intelligence
Academic
Cognitive
Psychoneurological
Behavioral
Family Background
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Number of different tests used
Number of different investigators using each test

The literature reviewed above seemed to view assessment results as a means of understanding the strengths and weaknesses of the delinquent individual and/or of ascertaining the causes of his or her behavior. Whatever the purpose, the long term goal was to use the information to plan effective rehabilitation for the young offender. Given this goal, it does not seem to be as important to dwell on etiology as it is to provide sufficient information to plan effectively for the individual. Thus, the existence of brain damage or biochemical imbalance become important primarily to the degree that they suggest specific remedial approaches but not in and of themselves. In other words, this information is valuable as a means to an end but not as an end in itself. The next section will look at programme where an attempt will be made to determine the types of programmes described in the literature, their effectiveness and the relationship between assessment and programme.

Programme

As in previous sections of this chapter that have discussed issues as they relate to several general categories, studies relating to programme can also be classified as academic, cognitive, biochemical and behavioral/social in general thrust.

Before looking at specific programmes however, there are several global issues of importance. The first would seem to be the latitude of the courts in their response the Young Offenders Act. Because the new bill both reduces the types of offences that can lead to adjudication and increases the personal responsibility of the young offender for those delinquent acts committed, there will be increasing concern for appropriate

disposition. There are however several principles in the Bill that would seem to allow the courts to recommend placement coincident with the individual needs of the young offender rather than with basic retribution and/or protection of society. Such statements include the following:

> "(c) young persons who commit offences require supervision, discipline and control, but, because of their state of dependency and level of development and maturity, they also have special needs and require guidance and assistance; (d) where it is not inconsistent with the protection of society, taking no measures or taking measures other than judicial proceedings under this Act should be considered for dealing with young persons who have committed offences;... (f) in the application of this Act, the rights and freedoms of young persons include a right to the least possible interference with freedom that is consistent with the protection of society, having regards to the needs of young persons and the interests of their families;" p. 4.

Thus, it would seem that there is a considerable latitude built into the Act for individual responses to the needs of young offenders. The problem may be however, the dearth of real alternatives in most communities to meet such needs. Shamsie (1980) found there were very few programmes that had been successful in treating antisocial adolescents. Ross and Gendreau (1979) in a review of 95 studies that had employed at least a minimal sort of experimental design with statistical analysis and a follow-up report period of at least six months, was more optimistic. They criticized the pessimism of earlier programme reviews on two grounds; they generally looked at programmes implemented prior to 1967 and the programmes reviewed were usually poorly designed. They grouped programmes into six basic types: family and community intervention, contingency management, counselling, diversion, biomedical assistance and miscellaneous treatment. On average they found a range of 5 to 50 per cent improvement in recidivism

(with some studies reporting recidivism rates as low as 2 per cent) in these programmes when they were compared to more traditional institutional approaches. The also found that these studies had not had a 'single cure' focus but had combined several approaches. For example, studies relying on behavioral management only were less successful than those that used behavior modification plus behavioral contracts and other complimentary behaviors such as modeling, role playing and more peer group interaction. They suggest that in institutions that house a heterogeneous population of offenders, one needs to provide more than one approach if one hopes to match individuals successfully with programme alternatives.

For this section of the report, thirty-four studies were reviewed; most dealt solely with young offenders but a few others that dealt with learning disabled students were also included.

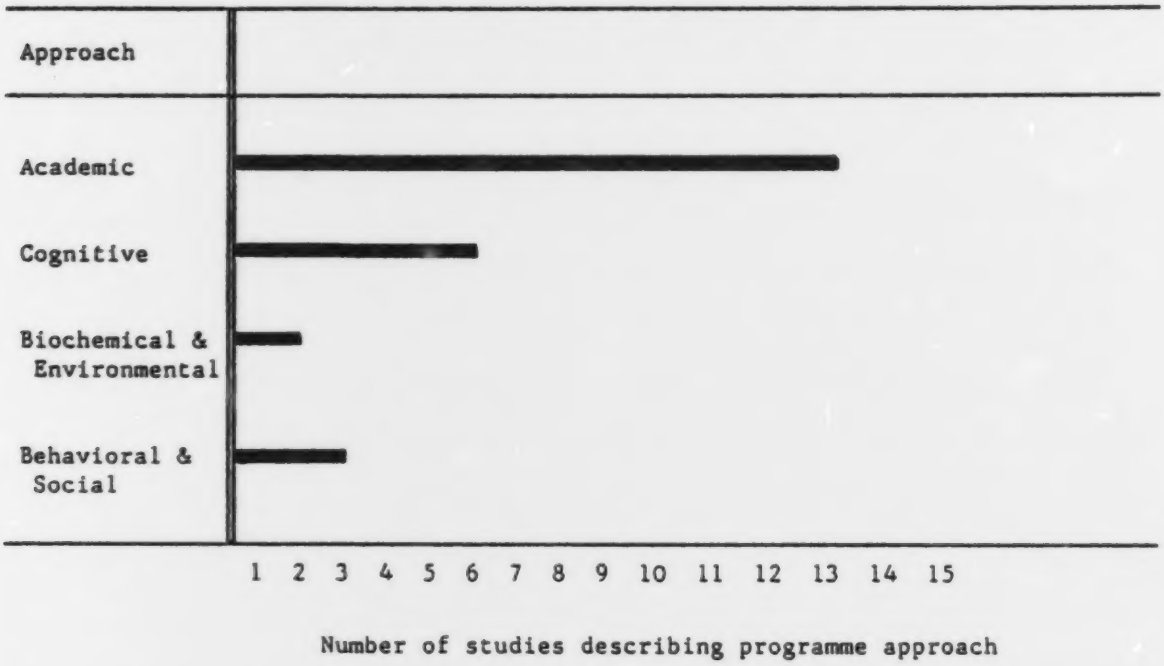
Insert Figure 2 here

As Figure 2 graphically demonstrates, the programmes studied have been classified primarily as academic, cognitive, biochemical/environmental or behavioral/social in thrust. As we have seen throughout this chapter, academic thrusts are once again the most dominant. This occurs in part because some studies have addressed several questions and so have been reviewed in more than one section but this also reflects the very real importance placed on the role of academic achievement for the future rehabilitation of young offenders. Of the fourteen studies that focus on academic programming, eight describe actual programmes while the remaining six make recommendations for programmes based on the needs of the populations they studied. One note of caution seems in order however, because while many programmes speak of their academic component, there

seems to be more administrative concern than active programming for academic needs in many of these reviews (Winger and Bennett, 1980).

Figure 2

Programme Approaches in Juvenile Delinquency


Approach
Academic
Cognitive
Biochemical & Environmental
Behavioral & Social
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Number of studies describing programme approach

Griffin (1979) summarizes responses to questionnaires from 182 persons involved with inmates' educational programmes across Canada concerning the educational programmes in their institutions. There were two philosophical positions among the respondents; the first was that they should simply teach skills and knowledge and the second was that education should be used to encourage value development and to affect the thinking errors that lead to criminality. His study found a high degree of illiteracy among inmates but very low levels of expectation for success in the educational programmes. Two hundred and twenty-three inmates also were surveyed. Their responses to preferred instructor were quite varied although most wanted structure to some degree. Fourteen per cent preferred teachers who tell you exactly what to do, 41 per cent preferred teachers who tell you what to do but lets you determine the order, 29 per cent preferred the ones who tell you how to follow the course of study and asks you to find your area of interest and 9 per cent preferred a teacher who wants you to determine your own area of interest and work on it fairly independently. Griffith concluded his report by suggesting that education had the potential to help inmates rehabilitate but that greater financial and personnel resources were needed to make it really work.

Winzer and Bennett (1980) looked at education in correctional institutions in Ontario and concurred with Griffith's findings that while educational approaches are highly spoken of, in reality they are given low priority for funds and time. They list the objectives for inmate education of the Ministry of Correctional Services as follows:

> "1. The provision of initial educational assessment to help determine educational placement
> 2. Individual counselling to interpret and clarify assessment information and to provide programme alternatives for the student

3. Placement in an individualized programme which will allow the students to begin to meet their needs
4. A wide variety of programmes including academic, technical, vocational and life skills courses which are kept current and relevant through a process of continuing review
5. Individual evaluation reports which indicate to the students their progress towards the realization of their goals
6. Appropriate credit for all achievement
7. Preparation for successful integration into the community" p. 8

They conclude that while these are good objectives, they are usually not implemented and that even inmates who are strongly motivated are frequently unable to find appropriate programmes available to them.

One aspect of the above study that was subsequently reported (Winzer, 1981) that did seem productive was the use of the Basic Literacy for Adult Development (BLADE) programme. A follow-up of students enrolled in it showed a drop in recidivism to 21 per cent from the 55 per cent rate of other inmates in the same institution, however, the results were confounded somewhat by poor controls for motivation.

Two studies have looked at a tutoring model to improve the reading skills of delinquent adolescents. Mercantino (1980) successfully used volunteers to provide remedial reading instruction through a diagnostic-prescriptive model. Czapo (1976) paired up six students whose reading levels were three to five years behind grade level with tutors for a ten week remedial programme. At the end of the period, both tutors and tutees had improved in reading, both groups had increased the number of positive verbal interactions with each other, both had shown improvement in neatness and meeting curfew and both had shown a reduction in adjudicated delinquencies. These effects were significant but unfortunately were not followed-up for maintenance.

Programmes that have combined individualized institutional programmes with careful community placement and follow-up are described by Sawicki and Schaeffer (1979) and Lescheid, Coolman and Williams (1983). Sawicki and Schaeffer instituted project LEARN which features automatic screening of all juvenile delinquents adjudicated in a specific time period (232), follow-up evaluation of those suspected of having a learning disability (63 per cent of total), development of individual educational plans for the 26 per cent who were confirmed as LD and who wished to participate in the programme, placement in a self-contained class for twelve weeks, ongoing liaison with the community school and parent involvement in workshops and family counselling when necessary. These students were subsequently placed in their home schools and did well there although there is no specific follow-up data reported. Lescheid et.al. (1983) describe the impact of a clinic school programme for young offenders. The purpose of their programme was to provide an extensive academic assessment for the adolescent following referral for assessment from juvenile court. One teacher provided the programme for a half day each day. The average stay for a student was 41 days during which they were assessed on a wide variety of instruments, observed carefully as they did their school work, had an individual educational plan developed for them and were discussed with the local school officials concerning placement at the home school. Forty-one students who had come through the family court clinic programme were compared to 25 who had been assessed but not involved in the clinic school. Follow-up was done at three months and one year and consisted of an examination of court involvement and school and work experiences. At both time periods, the clinic group were more

likely to be attending school and less likely to have been involved in further delinquent activities although this was not statistically significant at the one year period. This study found that while all the students involved had academic problems, many had a wide variety of emotional and social difficulties also. In spite of this however, the combination of careful academic assessment, development of individual programme plan and communication between the courts and school proved quite successful in maintaining these young offenders in school programmes.

Work study programmes have been an alternative used in several correctional institutions. Birkenmayer (1975) summarizes results of such programmes and found that recidivism rates were only 20.6 per cent among boys and girls who had participated in these experiences. His one recommendation for improvement however was that more emphasis should be put on the study component in future.

In the above eight investigations of existing programmes, six authors show positive effects of remedial academic programming for delinquents while two report poor effects primarily due to limited resources.

Mauser (1976), in a survey of 136 American institutions for delinquents found that the average pupil:teacher ratio (PTR) was 11:1; that in spite of a high incidence of learning disabilities among the population, only 15 per cent of the teachers had special education training; that the main instructional materials were workbooks, worksheets, commercially available kits and texts, and programmed materials; that instructional strategies included grouping based upon IQ, achievement and interest, a nongraded approach, letter grade evaluation and self-contained classrooms

for intellectually retarded learners. He concluded that this model was an outdated institutional one adopted from the public school and recommended "a specialized curriculum, presented within a context of positive relationship and sensitive teaching, offers the most direct and enduring means of overcoming disturbances associated with problems in self control." p. 37

Other authors have recommended changes in the educational programme available to the young offender. Reiter (1982) cautioned about labelling, and encouraged exploring the creative potential of the student and the expansion of teaching techniques. McKay and Brumback (1980) recommend the hiring of sensitive professionals who are aware of the impact of a learning disability on the young offender, a careful look at the student's educational history, and flexible individualized programmes at the adjudication stage. After finding that 55 per cent of their delinquent population had learning disabilities, Swanstrom, Randle and Offord (1981) recommend academic remediation for delinquents which Wilgosh and Paitich's (1982) conclusions also recommend. They feel that remedial strategies are an essential part of intervention for many juvenile delinquents.

In summary then, the aspects of academic programmes that the authors feel are essential for the young offender include sensitive teachers who are trained in special education and in creating positive classroom environments, greater allocation of funds to educational programmes, in the form of lower pupil:teacher ratios and more educational materials to match students' needs, development of specialized curricula that are based on careful assessment leading to individual educational plans and increased interaction between the correctional and educational personnel in local

communities. The presence of these components would go a long way to reducing the discrepancy between objectives and practice noted in some programs (Winger and Bennett, 1980). There is fortunately provision for including such components built in to the Young Offenders Act. Such provisions are found in section 20(1)(i) which allows for a treatment approach that can include placement in a facility (section 35(1)(b)(i)(iii) that would improve the young persons education or training.

A second and highly rated approach to programme is the cognitive one. Alley and Deshler (1979) recommend a learning strategies approach as the most appropriate one for teaching the disabled adolescent. This is defined as "techniques, principles or rules that will facilitate the acquisition, manipulation, integration, storage and retrieval of information across settings and situations", p. 13. Spivak and Shure (1981) have described a very successful 72 lesson programme involving interpersonal cognitive problem solving (ICPS) skills which they have taught to children and adolescents with good results across various social class groups and IQ levels. The ICPS skills include:

1. the capacity to generate alternative solutions to problems
2. considering the consequences of one's social acts in terms of their impact both on other people and oneself
3. articulating mentally the sequence of steps necessary to carry out a specific solution to an interpersonal problem
4. social causal thinking, an awareness of the

existence of motive in human behavior

5. sensitivity to problems, an awareness of the variety of interpersonal problems that can beset people and an ability to articulate them if asked
6. dynamic orientation, the ability to look beyond the surface of human behavior and to appreciate that it may be caused by underlying motives.

Narrol, Silverman and Waksman (1982) have taught the cognitive skills developed by Feuerstein (1979) to vocational high school students who represent a group of students not unlike the young offender in terms of academic retardation, low SES background, and dull normal intelligence. These students were taught cognitive and thinking skills daily for an entire school year. Post testing showed significant gains in cognitive thinking plus anecdotal reporting of an enhanced self concept but no direct transfer to academic achievement. They have also taken this program into adult penetentiaries with good results (Waksman, Silverman & Weber, 1979).

Ross and Fabiano (1981, 1983), on the basis of an extensive review of the literature describe a cognitive programme which they feel would be appropriate to the treatment of offenders based on careful assessment of the individual. The model suggests that criminal behavior may be associated with developmental delay in the acquisition of the cognitive skills which are essential for effectively coping with social situations and includes social perspective-taking, means-ends reasoning, interpersonal problem-solving and impulsivity control. They suggest that the person who

implements such programmes should be able to motivate the inmate to be involved in the programme, empathic to the inmate's thinking and feeling, be able to model effective reasoning and problem solving and be eclectic in his/her approach to interaction.

The final cognitive approach to be described here is the recent study done by Koopman (1983). Central to her study of adult inmates is the hypothesis that there is an inmate group with serious problems in their cognitive processing skills. These problems were more specifically identified as cognitive incompetence and inability to deal with syntactic complexity found in language. She recommends that treatment for this group should focus on their weakness and be structured to teach those skills not previously learned.

There is strong concensus among each of the authors who argue for a cognitive approach that the objectives of such programs should include the ability (a) to generate a variety of solutions to problems, (b) to be able to understand the viewpoint of others in social situations and (c) to understand and use means/ends or cause and effect reasoning. There is also concensus concerning the need for an able sensitive teacher to implement a cognitive approach.

Biochemical approaches to programme were not found in many studies dealing with young offenders. However, they were described by many who deal more extensively with learning disabled populations. As mentioned previously, the most frequently mentioned programme in this category is the diet modification advocated by Feingold (1974). He has cited many individual cases of positive response to a highly specialized diet that excludes any foods containing additives or food colouring. Initially his

diet also excluded salicitates which were found in many fruits but more recently these foods have been allowed. His findings have not been widely replicated however and most reviews (Hallahan and Kauffman, 1982; Mattes, 1983; Kavales et.al., 1983) have found that the diet was not generally effective except for a very small number of children.

Investigations into the effect of nutritious diets per se have yielded more positive results however. Langseth and Dowd (1978) showed positive results with a diet high in protein and low in carbohydrates (especially sugar); Growdon, Cohen and Wartman (1977) stated evidence to show that regulations of neurotransmitters are effected by levels of serotonin and acetylcholine which in turn depend upon the amount of tryptophan and choline available to the brain which fluctuate according to dietary factors. These authors suggest that diets high in carbohydrates (but not necessarily sugar) and reduced in protein would be most effective in releasing tryptophan to the brain. This contradicts the Langseth and Dowd findings somewhat but is still consistent with the concept of a well-balanced diet that avoids extremes of any major component. Kershner and Grekin report on a study that combined a good diet with megavitamin therapy. They found significant improvement in their learning disabled adolescent population in discipline, attention-span, reduced aggressiveness and hyperactivity that was attributed to diet mainly. Hippchin (1976) has reported significant improvement among inmates in reduced hyperactivity, general discipline, reading, speech and language, and visual impairment with a combination of diet and vitamin therapy. The diet treatment restricted caffeine and sugar related foods.

Studies that have looked at response to stimulant drugs have been somewhat pessimistic. Aman (1980) in a review of 64 studies found rather limited results and in the seven studies that involved follow-up measures, no experimental group showed greater improvement than did the control groups and some experimental groups actually were worse. An extensive review of the literature led Godow (1983) to conclude that while stimulants may increase academic achievement in some cases, the effect on standardized achievement test scores is not robust, there is considerable variation among individuals, the implications for adults are minimal and some behavioral interventions are clearly superior. Yeudall and his associates (1978, 1980) however have suggested that drug therapy could be an effective component of the programme thrust for offenders who have been identified as having brain damage.

In summary, while medication is not generally supported as the treatment of choice for either young offenders or adolescents with learning disabilities, there is some support for the efficacy of well-balanced nutritional diets that avoid processed foods and additives when possible as one aspect of a rehabilitation programme.

The last programme thrust to be discussed is the behavioral/social one. Birkenmayer and Polonoski (1975) describe the DARE experience (development through adventure, responsibility and education) and follow-up for 100 boys who were described as recidivists, having academic problems, truant and as having received psychiatric help previously. The purposes of the programme were to develop a sense of purpose among the group to enhance self-esteem, and to develop a stronger desire for achievement. The strategy to accomplish these goals was to provide nature challenges of

increasing difficulty. At follow-up only 13 per cent of the group were still at school following the DARE programme. Problems faced at school included keeping up their grades, trouble with friends, boredom, poor relations with teachers and principals, trouble readjusting after training school and accepting authority. The authors concluded that success depended more on individual preparedness to cope with the community than on the training school programme.

Ayers (1981) has recommended a structured, integrated approach that combines teaching and modelling of social skills, as integral to the programme provided for the young person in order to develop his or her value system so he or she will more easily integrate with society when he returns to the community. Minden (1977) in his report to the Subcommittee on Childhood Experiences as Causes of Criminal Behavior stressed the importance of parental training and involvement in the rehabilitation of their children and outlined a ten week course for parents. This course would deal with understanding the child's learning style, parents as teachers, parent-child communication, managing child's behavior and discipline and skills for problem solving and stress reduction. While these social learning approaches seem promising, they have not yet been implemented so it is difficult to comment upon their efficiency. However many of the studies reviewed by Ross and Gendreau (1979) that did focus on emotional/social issues, produced positive results so this does seem to be a useful component of a total programme for the young offender.

The last study to be reviewed here looked at the response of 464 training school students to their programme and at their ability to integrate back into their community. Lambert and Birkenmayer (1972) found

that 48 per cent returned to training school with difficulties in school and work placement related to academic achievement and positive experiences on the job. They concluded that the young offender population could be broken down into two groups: one that could be classified as 'normal juvenile delinquents' and a second as 'emotionally disturbed juvenile delinquents'. The first group was characterized by stable home environments, some school difficulties and no serious emotional disturbance. These youth required temporary help, a more structured setting, firm limits, a continuation of educational, recreational and physical care and in general could be expected to respond to the traditional training school programme. The second group was characterized by the presence of emotional or family difficulties and as having received psychiatric help in the community prior to attending training school. Programme for them involved long term plans, help to develop stable relationships, lots of attention to individual and emotional problems and assignment to small, personal treatment units that would provide long term support. This concept of two groups of delinquents is consistent with other indications of mild and severe problems in learning, cognition and anti-social difficulty that have been mentioned earlier.

To conclude this discussion of programme thrusts, it would appear that the ideal programme would involve a careful assessment and development of an individual educational plan (Leschied et. al., 1983) a well-balanced diet (Langseth and Dowd, 1978), and interaction by training school personnel with parents and community schools to improve the home situation and pave the way for a successful return to school (Ross and Gendreau, 1979). Each aspect of the programme would be coordinated and implemented

by a sensitive, well-trained person (McKay and Brumback, 1980; Ross and Fabiano, 1983) who could provide a positive environment in the training school for the young offender, motivate him or her to participate in the programme and learn to value prosocial academic and behavioral activities. These persons would also structure the transition from the training school to the larger society through use of the provisions in the Young Offenders Act that can assist in successful re-integration. Such procedures would include moves from closed to open custody, orders for intermittent custody, review procedures, temporary absence provisions, and changes in disposition from open custody to probation.

In chapter 2 we will see how closely present programmes across Canada approach this ideal.

Chapter 2

Perspectives from the Field

The purpose of this chapter was to explore the assessment and programme alternatives currently in use in Canadian training schools and clinics that service the young offender population and determine what specific approaches are used to identify and programme for those who have been diagnosed as learning disabled.

Sample

Inquiry letters were sent to the appropriate provincial ministries across Canada asking for the names and addresses of each training school or support service for delinquents in their province. In addition to the names of training school personnel, in both Alberta and Ontario, the names and addresses of clinic personnel who service the courts were also sent to the investigator by the ministry respondant. These persons were included in the study since they served the court systems in those two provinces primarily through the provision of assessment reports that were used in preparing predisposition reports. In this sense they were seen to provide useful data on assessment instruments and on the number of adolescents they served who were diagnosed as learning disabled. Following this, questionnaires were sent out to 40 training school personnel and 36 clinics with a covering letter explaining the nature of the research and an addressed return envelope. If there was no return within six weeks of the initial mailing, reminder letters with a second questionnaire were sent out. Responses were received from every province with the exception of Prince Edward Island, who uses the services of the province of Nova Scotia,

and Quebec. The latter province responded to the initial request to the ministry for addresses but only two of the five institutions responded subsequently, both saying they did not serve the population in question.

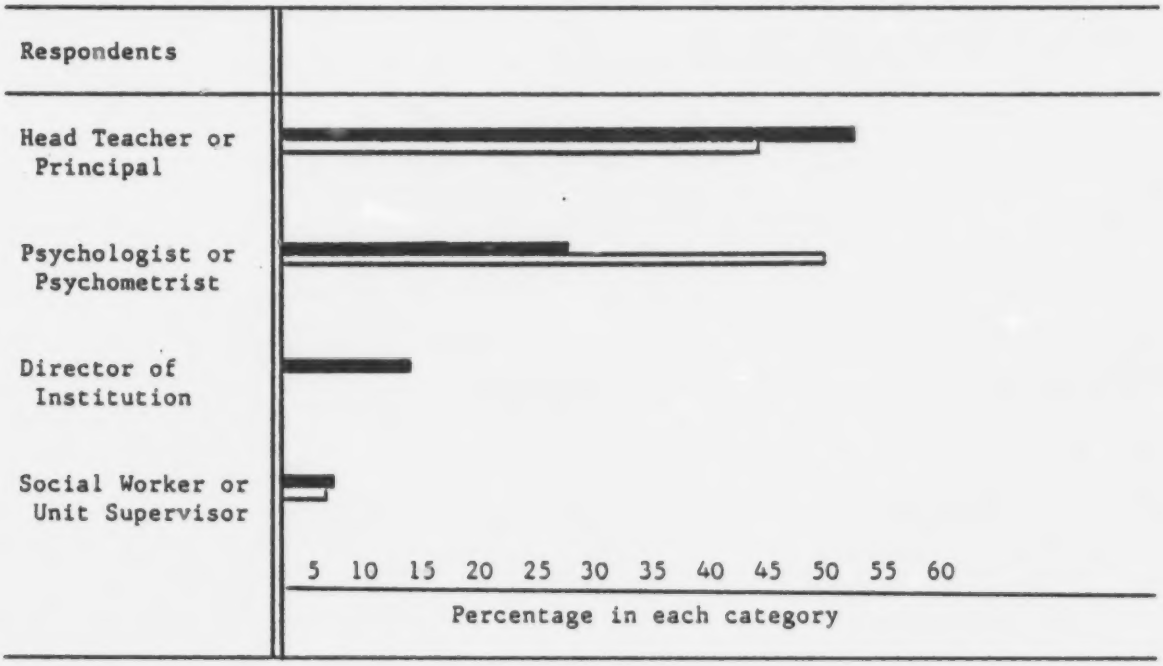
In total 29 training schools or 73 per cent responded to the questionnaire and 16 or 44 per cent of the clinics responded with another 5 returning their questionnaires because they no longer served the courts or the young offender population. The return was well within the forty per cent rate usually found with questionnaire data and although the actual number is not large, it is representative of all the English language institutions. A breakdown of who the respondents were in each setting is summarized in Figure 3.

Insert Figure 3

Psychologists and head teachers were the main respondents in both groups although four directors were among the training school respondents. The sec ond aspect of the survey involved telephone interviews with those training school respondents (a) who indicated they would be willing to be interviewed and (b) whose questionnaire responses indicated a variety in programme that had not been fully tapped by the questionnaire. In all, twelve respondents were interviewed by telephone; one from each of Saskatchewan, New Brunswick, British Columbia, and Nova Scotia; two from Ontario, Alberta and Newfoundland and three from Manitoba.

Figure 3

Breakdown of Respondents to Questionnaire by Profession


Respondents
Head Teacher or Principal
Psychologist or Psychometrist
Director of Institution
Social Worker or Unit Supervisor
5 10 15 20 25 30 35 40 45 50 55 60
Percentage in each category

Training School Personnel (N = 29)

Clinic Personnel (N = 16)

Instruments

A questionnaire was developed for institutions that serve the delinquent population. An original draft was field tested locally with feedback being incorporated into the final draft. The questions asked were divided into three parts (see Appendix A).

Part A deals with assessment information. The literature search focussing on assessment of learning disabled delinquents had indicated several major categories of assessment: intellectual, educational, psychoneurological and personality or behavioral. The twenty-one tests which were cited most frequently in each category were listed in this part of the questionnaire and respondents were asked to respond to them using a double Likert scale that determined frequency of use of each instrument and value of the instrument. There was space at the bottom of the list for respondents to list up to four additional tests that were used in their institution. Following the above, respondents were then asked to "indicate the four assessment techniques that are most useful to you in planning for the population you work with."

Part B dealt with programme information of a general nature. Thirteen programme alternatives: six focussing on behavioral training, four on academic training, two on sports and hobbies, and one on diet, were listed. Respondents were asked to indicate whether each was part of their school and/or treatment programme and if it were, to indicate how many hours per week, on average, a student would be involved in that aspect of the programme. Following this they were asked to "indicate the four techniques used most often in your setting" and to "indicate the four techniques you feel are most helpful in rehabilitating juveniles in your setting."

Part C asked for general information about the institution such as the number of male and female inmates and the amount of time spent in academic and vocational instruction. It also asked respondents to indicate how many students showed academic retardation of two years or more in reading, writing and spelling, and mathematics. A definition of learning disabilities (one consistent with that used by the Canadian Association for Children with Learning Disabilities) was given and respondents were asked to indicate what percentage of their population were learning disabled. They were also asked to indicate how they determined this and how they programmed for that population.

As was indicated earlier, twelve of the training school respondents were contacted by telephone to participate in a structured interview. This included ten questions that delved more deeply into the type of adolescent in the institution, the educational philosophy espoused, specific aspects of the programme and teaching personnel issues (see Appendix A). Each person contacted responded enthusiastically to the request for further information. The telephone interviews lasted between thirty and sixty minutes.

Results

All data were analyzed for frequency of response. Pearson Product Moment Correlations were calculated between frequency of use and value responses on the Likert scale for each assessment instrument. Chi square comparison were calculated between the training school and clinic populations but these were not significant. Because they were not significantly different, correlations were calculated among all assessment instruments on frequency of use and among all programme alternatives with

the two groups combined. Responses to open-ended questions on the questionnaire and interview were analyzed for major trends.

Assessment

Respondents were asked to respond to assessment information in several ways. Twenty-one assessment instruments that had been cited frequently in the literature were listed and respondents indicated how frequently they were used in their institution and how valuable they were. In addition, there was space provided to list up to four additional tests that were used locally. These were described as local 1, 2, 3, and 4. Independent of the above rating, respondents also were asked to indicate the four assessment techniques that were most useful to them in planning for the population they worked with. Table 1 indicates the ranking given by the training school and clinic personnel to instruments on frequency and value. For the training school personnel, observation of behavior, informal assessment of academic work, the Wechsler Intelligence Scale for Children-Revised (WISC-R), the Wide Range Achievement Test (WRAT) and local 1 were used most frequently.

Insert Table 1 here

Table 1

Rank Order of Frequency of Use and Value of Instrument
by Training School and Clinic Personnel

Assessment Instrument	Frequency of Use		Value of Instrument	
	Training School	Clinic	Training School	Clinic
Observation of Behavior	1	1	1	1
Informal Assessment of Academic Work	2	6	2	5
WISC-R	3.5	5	5	4
Wide Range Achievement Test	3.5	3	7	3
Local 1	5	2	3	2
Physical Examination	6	12	8	10
Local 2	7	7	4	7
Vision Tests	8.5	14.5	12	11.5
Local 3	8.5	8	6	17.5
Peabody Individual Achievement Test	10.5	4	11	6
Bender Visual-Motor Gestalt	10.5	10	10	8.5
Hearing Tests	12.5	14.5	13	13
Local 4	12.5	13	9	15
Canadian Tests of Basic Skills	14	19.5	14	21
Draw-a-Person (Family)	15.5	16	16	15
M.M.P.I.	15.5	11	15	11.5
Woodcock Reading Mastery Tests	17	17	19	19
KeyMath	18	8	18	8.5
Halstead-Reitan Battery	19	24	20	22
Stanford-Binet Intelligence Test	20	19.5	17	15
Illinois Test of Psycholinguistic Abilities	21	18	22	17.5
Detroit Aptitude Tests	22	23	23	23.5
Frostig Test of Visual Perception	23	21	21	20
Slingerland Tests of Perception	24	22	24	23.5
Thurstone Flags	25	25	25	25

For the most part they were also seen as most valuable although local 2 was seen as somewhat more useful than the WRAT. For the clinic personnel, observation of behavior, local 1, WRAT, Peabody Individual Achievement Test (PIAT), and WISC-R were most frequently used while observation, local 1, WRAT, WISC-R and informal assessment of academic work were found most valuable. For both populations, there was a strong relationship between the tests used and their perceived value to the assessor.

When the groups were asked to independently indicate those assessment instruments they found most useful in programme planning, their responses were very similar to those reported above. For the training school group, local 1, local 2, observation of behavior and WISC-R were seen as most useful while the clinic group found the WISC-R, observation of behavior, WRAT and local 1 to be most useful. This is consistent with instrument usage reported in the literature review where the WISC-R and the WRAT were reported most frequently.

There was considerable agreement among the clinic and training school personnel about the instruments used and their value. Table 2 shows the correlation among use and value for all respondents. It was significant for all tests except the Illinois Test of Psycholinguistic Abilities and Slingerland Tests of Perception, neither of which were used or valued greatly.

Insert Table 2 here

There was an extremely wide variety of tests reported in the four local preference slots. They are listed in Appendix B with the number of respondents that mentioned each.

Table 2

Correlation Between Frequency of Use and Value of Instrument for Twenty-Six Assessment Instruments (N = 45)

Test	Correlation	Significance Level
Bender Visual-Motor Gestalt	.735	.001
Detroit Aptitude Tests	.349	.012
Draw-a-Person (Family)	.670	.001
Frostig Test of Visual Perception	.424	.002
Halstead-Reitan Battery	.327	.017
Hearing Tests	.600	.001
Informal Assessment of Academic Work	.670	.001
Illinois Test of Psycholinguistic Abilities (ITPA)	.148	.172
KeyMath	.840	.001
Minnesota Multiphasic Personality Iventory (MMPI)	.661	.001
Observation of Behavior	.260	.046
Physical Examination	.595	.001
Slingerland Tests of Perception	.238	.062
Vision Tests	.723	.001
Wechsler Intelligence Scale for Children - Revised (WISC-R)	.776	.001
Peabody Individual Achievement Test (PIAT)	.761	.001
Woodcock Reading Mastery Tests	.779	.001
Canadian Test of Basic Skills (CTBS)	.576	.001
Wide Range Achievement Test (WRAT)	.605	.001
Thurstone Flags	.685	.001
Stanford-Binet Intelligence Test	.720	.001
Local #1	.654	.001
Local #2	.841	.001
Local #3	.793	.001
Local #4	.803	.001
Local #5	.947	.001

Insert Table 3 here

Table 3 analyzed all the tests mentioned plus those included in the questionnaire by category and frequency of mention. There were eighty-six tests mentioned in total.

Table 3

Category of Tests Currently Used in Canadian Settings Servicing the Young Offender

Test Category	Number of Different Tests Used in Category	Frequency of Use	Rank
Educational	30	158	1
Personality Tests	21	95	2
Intelligence Tests	9	55	3.5
Sensory and Medical	3	55	3.5
Psychoneurological Tests	16	39	5
Other	7	7	6
Total	86		

Educational instruments were mentioned most often and also represented the greatest variation. The most frequently cited tests in this category were informal assessments of academic work, the Wide Range Achievement Test (WRAT) and the Peabody Individual Achievement Test (PIAT) as can be seen in Table 4.

Insert Table 4 here

Table 4

Assessment Instruments Used in Canadian Institutions and Clinics to Determine Educational Skills of Juvenile Delinquents

Instrument	Number of Respondents who Reported Using the Instrument
Informal Assessment of Academic Work	29
Wide Range Achievement Test	28
Peabody Individual Achievement Test	20
KeyMath	12
Canadian Tests of Basic Skills	11
Woodcock Reading Mastery Tests	11
Stanford Diagnostic	6
Woodcock Johnson Psychoeducational Test Battery	5
Schonell Reading	4
Metropolitan Achievement	4
Diagnostic Reading Scales	3
Gates-McGinitie Reading	3
Slosson Reading	3
Brigance Comprehensive Inventory of Basic Skills	3
Gray Oral Reading	1
TORC Reading	1
Watson Diagnostic Math	1
Silvaroli Informal Reading Inventory	1
Dolch 220	1
Sucher Alfred Reading Placement Inventory	1
MAT	1
Paragraph Completion Test	1
Monroe-Sherman Math	1
Nelson Reading	1
Burt Word Test	1
Edmonton Spelling	1
Gates McKillop Oral Reading	1
Monroe Group Diagnostic Test	1
Primary Informal Tests	1
Individual Subject Assessments	1

The second most frequent category of assessments used were in the personality area. Behavioral observation and the Minnesota Multiphasic Personality Inventory (MMPI) were the most frequently used tests in this category. Intelligence tests were cited next with the Wechsler Intelligence Scale for Children, Revised Version (WISC-R) dominating the class as the most frequently used instrument. Most respondents indicated that general physical and medical examinations were conducted at their institutions even though the results were not necessarily used in programming. The least frequently used category of assessment instrument was the psychoneurological area. The Bender Visual-Motor Gestalt was cited fairly often but it was not listed as an instrument that helped in planning for individual adolescents.

The category preferences indicated were consistent with the ratings of utility given earlier.

Correlations among tests in each category were calculated to determine the likelihood of respondents to use several tests as opposed to a few favored ones. Tables 5, 6, 7, and 8 indicate the results.

Insert Table 5 here

Each of the three personality instruments listed in the questionnaire correlated significantly with each other. This was especially true for the MMPI and Draw-a-Person.

Insert Table 6 here

Among the intelligence measures (see Table 6), personnel were inclined to use both the WISC-R and Stanford-Binet although the WISC-R was the much preferred test as reported earlier.

Insert Table 7 here

Table 5

Correlation Among Personality Assessment Instruments on Frequency of Use
(N = 45)

	DAP	MMPI	BEH.OBS.
Draw-a-Person (Family)	1.00	.514xxx	.275x
Minnesota Multiphasic Personality Inventory (MMPI)		1.00	.292x
Observation of Behavior			1.00

x = $p < .05$ xxx = $p < .001$

Table 6

Correlation Among Intelligence Tests on Frequency of Use

N = 45

	DAP	WISC-R	SB
Detroit Aptitude Tests	1.00	.142	.103
WISC-R		1.00	.353xx
Stanford-Binet			1.00

xx $p < .01$

Table 7

Correlation Among Educational Tests on Frequency of Use
N = 45

	Inf.	KeyMath	PIAT	Woodcock	CTBS	WRAT
Canadian Tests of Basic Skills	-.045	.165	.267x	.077	1.00	.096
Informal Assessment of Academic Work	1.00	-.021	.275x	.662xxx	-.045	.212
KeyMath	-.021	1.00	.331x	.490xxx	.165	.294x
Peabody Individual Achievement Test	.275x	.331x	1.00	.234	.267x	.412xx
Wide Range Achievement Test	.212	.294x	.412xxx	.257x	.096	1.00
Woodcock Reading Mastery Tests	.662xxx	.490xxx	.234	1.00	.077	.257x

x $p < .05$ xx $p < .01$ xxx $p < .001$

In Table 7 correlations are shown among the six achievement tests listed in the questionnaire. Each test correlates with at least one other indicating that each institution has a variety of tests in their repertoire to determine academic performance. The PIAT correlates significantly with four of the five other tests while the Woodcock Reading Mastery Tests, WRAT and KeyMath each correlate with three others. These data suggest that personnel use a fairly extensive academic test battery to analyze academic performance.

Insert Table 8 here

There is a very high correlation among the three medical tests which suggests that all three are used frequently. Among the psychoneurological tests there is not a great deal of significant correlation although the ITPA correlates highly with the Halstead-Reitan and hearing tests.

Table 8

Correlation Among Psychoneurological and Physical Assessments on Frequency of Use
N = 45

	Bender	Frostig	H-R	ITPA	Hearing	PE	Vision
Bender Visual Motor Gestalt	1.00	.115	.017	.224	.154	.071	-.048
Frostig Test of Visual Perception		1.00	.136	.289x	.153	.060	.304x
Halstead-Reitan Battery			1.00	.567xxx	.131	.079	.178
Illinois Test of Psycho-linguistic Ability				1.00	.481xxx	.105	.243
Hearing Tests					1.00	.517xxx	.664xxx
Physical Examination						1.00	.680xxx
Vision Tests							1.00

x $p < .05$ xxx $p < .001$

Thirty-six respondents to the questionnaire indicated that observation of behavior was a major component of their assessment approach. In the telephone interviews, they were asked to elaborate upon this. In most cases (ten of the eleven) this was primarily informal. Students were observed continually by either a specified worker or by all the staff and the general behavior pattern would be discussed through anecdotal reports at weekly or monthly team meetings or immediately if the behavior was markedly deviant from expectation. In six of the institutions there was some formal structured observation that was usually related to a behavior modification programme. In no cases was there a structured clinical observation of the student. Observation was seen as a natural aspect of teaching and interacting with the student.

In summary then, the categories of abilities that are most frequently assessed in Canadian institutions are physical, intellectual, and academic achievement.

The tests that are used most frequently are the Wechsler Intelligence Scale for Children-Revised (WISC-R), the Wide Range Achievement Test (WRAT), the Peabody Individual Achievement Test (PIAT), and the Bender Visual-Motor Gestalt. In addition, most institutions informally observe behavior and informally assess academic work.

To elaborate further on the approach to assessment found in Canadian institutions, responses from the twelve interviews will be described. Because of the small number of persons interviewed and the informality of the structured interview, these responses were not statistically analyzed. They are of value descriptively however in expanding upon the issues raised through the questionnaire data.

An example of the assessment approach in Canadian institutions is the following which is used at the Cecil Facer School in Sudbury, Ontario.

> Shortly after arrival all students are seen by the Assessment and Community Liaison Coordinator (A.C.L.C.) for an initial assessment to establish grade placement, achievement attendance, attitudes, etc. The Peabody Picture Vocabulary Test and the Wide Range Achievement Test are usually given to help establish a student grade level for initial placement. This information is verified by direct contact with the student's last school.
>
> This information is provided by the A.C.L.C. to the Principal and the student is assigned to an appropriate full time school placement and a specific teacher (Prime Teacher) for initial educational programming, observation and detailed assessment. A wide variety of assessment instruments both norm-referenced and criterion referenced are available for use depending on previous testing, and current needs.

In the telephone interview, the eleven respondents were asked to describe the residents of their institutions. Descriptors were categorized by ethnic breakdown, age, adjudication, academic and personality factors.

On ethnic background, four reported large native Indian populations, one a large French Canadian population and the remainder reported a primarily English Canadian mix. The age range reported was 12 to 17 years with an average of 15.5 years.

Admission to training school occurred both through adjudication and through provincial mental health recommendations. This latter reason for admission is not acceptable under the Young Offenders Act and so the sample in training school when this survey was conducted was somewhat different than the sample that would be admitted since the act was implemented. Conclusions for a young offender/learning disability link based upon this sample may be limited by this sampling difference but in general there is sufficient similarity in the samples to make general conclusions. The

major offenses were theft and break and enter although eight respondents indicated a small but significant number or delinquents who had committed serious crimes, usually armed robbery. The other major reason for training school admission was unmanageable behavior that tended to refer to female more than male adolescents. Since this is not considered as offense under the Young Offenders Act, this entree into institutional care will no longer be seen among adjudicated youth.

Four aspects of academically related characteristics were given. These included intelligence, attendance, motivation and academic functioning. Seven of the eleven respondents indicated that the average student in their institution was in the dull normal range (IQ of 80-90) although there were several comments suggesting that this was a minimal estimate of their potential. The remaining four respondents felt that their students covered the full range from borderline to above average but also felt that the average would be in the low average range (IQ of 90 to 99). Poor attendance in school was reported in four cases.

Ten of the eleven respondents stated that their students had a very negative attitude towards school upon arrival at the institution. However, six stated that these attitudes improved considerably during the students' stay in training school and in fact held after they were released to the community. All respondents indicated that the average student in their institution was academically retarded, usually by about two years but with a range of functioning from grade 1 to high school.

The personality characteristics mentioned varied greatly and included statements like "psychologically immature, hyperactive, unable to make friends, unwilling to conform, aggressive, and severely emotionally

disturbed". There was no distinct pattern mentioned here although aggressive was mentioned most often.

Programme

Respondents were asked to indicate which of thirteen programme alternatives they used and how many hours per week the average student was involved in each programme alternative. There was also space allowed for local option 1 and 2 but these were rarely filled in. The additional programmes mentioned here are summarized in Appendix 2. This contrasts highly with the use of these optional categories in the assessment portion of the questionnaire and seems to reflect the more generic quality of programme versus the specific nature of an assessment instrument.

Insert Table 9 here

As table 9 indicates, most institutions and clinics used a wide variety of programme alternatives. The most frequently used programmes in training schools are individual counselling, remedial academic, sports programme and regular academic. Among clinic personnel, the most frequent programme alternatives are individual counselling, problem solving skill training, remedial academic, group counselling and behavior modification.

Table 9

Percentage of Training School and Clinic Personnel Who Use Each Programme Alternative and the Mean Number of Hours Per Week Each Alternative is Used

Programme Alternative	Percentage Use by		Mean Number of Hours Per Week Used in	
	Training School (N=29)	Clinic (N=16)	Training School	Clinic
Individual Counselling	100%	92%	5.3	2.8
Group Counselling	81%	75%	2.3	1.7
Family Counselling	54%	58%	1.9	.2
Behavior Modification	81%	75%	36.3	13.6
Time Out	77%	67%	3.2	.5
Problem Solving Skills	81%	83%	1.8	.7
Regular Academic Programme	88%	67%	12.5	9.7
Remedial Academic	100%	75%	8.8	2.0
Vocational Training	65%	33%	6.6	.1
Study Time for Academic Work	58%	50%	1.9	1.1
Hobby and Craft Training	73%	50%	6.0	1.2
Sports Programme	92%	67%	7.9	1.7
Diet Control	42%	33%	1.3	0

In the training school, behavior modification, when used, would seem to be an ongoing part of the daily programme. It takes many different forms which were followed up in the telephone inventory. Ten of the twelve telephone interviewers reported using behavior modification frequently. Five programmes use it continually in both the school and residential programme. In some situations students must have earned points for all privileges over and above basic food and clothing while for others they are used primarily for increased freedom and special outings. All use the system as a means of gaining additional privileges but three also report using it to remove privileges. In some cases the behaviors to be worked on are determined jointly by the student and staff but in most cases the school staff and the psychologist work out the programme. Usually the programmes are developed to be worked on individually but two institutions use group contingencies where the reward is often a desired activity. Points are tallied daily and/or weekly and may be discussed with the student (especially if low) or used as part of the regular staff reports on the students. The actual rewards to be earned vary greatly across institutions. The range includes snacks, models, visits to MacDonald's, money, guitar lessons, freedom passes and reduced time in the institution. All users report that it is a valuable way of controlling and improving student behaviors. This is consistent with reported use of behavior modification in the literature review (Ross and Gendreau, 1979).

Both regular and remedial academic work is a part of every student programme in Canadian training schools. On average, twenty-one hours per week or four plus hours per day are spent in school with an additional one to two hours per day spent in vocational training. According to the

information provided by the respondants, students who were admitted to training school under the Juvenile Delinquency Act spent approximately 9.7 months in the training school with a range of ten days to five years so they were out of main stream education for approximately a year and thus available for remedial instruction in the training school. Whether sentences will be of a similar length under the Young Offenders Act can only be speculated upon but with treatment and attendance in an appropriate educational setting being available dispositions, hopefully those young offenders who do have learning disabilities can be involved in a remedial program for at least a six to twelve month period.

The training school programme is varied across the country but seems ready and able to deal with a variety of students. Telephone respondents were asked to describe the basic philosophy of their institution. While all respondents spoke of the necessity to improve academic skills and general attitudes among their students, sixty-four per cent describe an essentially remedial philosophy while thirty-six per cent described an essentially personal growth philosophy in their institutions. The actual comments related to an academic philosophy included the necessity to assess the student's strengths and weaknesses, the necessity of preparing them for reentry into community schools, and the necessity for academic upgrading and success so that they could be 'normalized' and thus fit back into their communities. Comments supporting a personal growth philosophy included experiencing a positive peer culture, the necessity to improve in self esteem, to take pride in oneself and one's work and to develop a wholistic thrust where all the needs of the individual were understood and met.

These two thrusts are evident in looking at the questionnaire data. As Table 9 indicates, academic programming is used in all cases. Table 10 shows the amount of overlap between various academic programme thrusts. Regular and remedial academic overlap quite significantly while regular academic and study time are less highly correlated. Remedial academic correlates significantly with regular academic and vocational while vocational correlates with remedial and study time. Time out to study is a relatively infrequent approach used in Canadian institutions and while 58 per cent of training schools report using it in their programme, on average, students in training school spend less than two hours per week in supervised homework.

Insert Table 10 here

Table 10

Correlation Among Academic Programme Alternatives
N = 45

	Regular Academic	Remedial Academic	Vocational Training	Study Time
Regular Academic	1.00	.462xxx	.043	-.072
Remedial Academic	.462xxx	1.00	.327x	.240
Vocational Training	.043	.372x	1.00	.285x
Study Time	-.072	.240	.285x	1.00

x = $p < .05$

xxx = $p < .001$

Table 9 summarizes the many programme alternatives that focus on personal growth. These include individual counselling, group counselling, family counselling, problem solving skills, behavior modification and time out. In Table 11, the degree of overlap among these programmes is summarized.

Insert Table 11 here

Individual counselling correlates mildly with group counselling and problem solving skills but in general, there is very little overlap among the various personal growth alternatives even though individually they are a part of most programmes.

The last general programme category to be commented on is sports and crafts. These play an important role in the training school both for their entertainment value and for their 'normalizing potential'. Diet control is used least frequently in Canadian institutions and in programme elaborations, no respondent indicated that it played a significant role. The use of medication was not specifically probed for in this study but again, no one mentioned it spontaneously when given an opportunity to expand on programme thrusts on the questionnaire or in the telephone interview.

Table 11

Correlation Among Behavioral Programme Alternatives
N = 45

	Behavior Modification	Group Counselling	Individual Counselling	Family Counselling	Time Out	Problem Solving Skills
Behavior Modification	1.00	-.106	-.082	-.206	.089	-.106
Group Counselling	-.106	1.00	.322x	.144	-.019	.228
Individual Counselling	-.082	.322x	1.00	.185	-.048	.322x
Family Counselling	-.206	.144	.185	1.00	.181	.144
Time Out	.089	-.019	-.048	.181	1.00	-.019
Problem Solving Skills	-.106	.228	.322x	.144	-.019	1.00

x = $p < .05$

The pupil:teacher ratio in Canadian institutions is good. It ranges between one to two and one to twelve with an average of one teacher to six students at any one time. The range of actual numbers of teachers in each institution is from four to twenty-four with an average of 8.7 academic teachers per institution. These figures include the principal but not other special support personnel such as psychologists or social workers. This figure does suggest some problems in implementing a full programme since the range of skills and knowledge that must be taught ranges from grade 3 to college preparation in all subject areas. Expertise across this range is impossible in most of our institutions and does create a serious problem at both the lower remedial levels in basic skills and at the upper levels in academic knowledge subjects. Forty-nine per cent of the teachers in the academic programme have special education training, five per cent are currently working towards it and in most institutions there was a sense that more of their teachers would be pursuing additional training. In only two cases was the training specifically geared to learning disabilities but there is a general approach taken in the courses to the mildly handicapped learner. Among telephone interviewees, seven institutions stated that their teachers were hired by the ministry and three reported being hired by the local school board. There was no indication of which was more effective, but if community school liaison is an important component in rehabilitation, then one would suspect this would be more effective when the teachers all have the same approach to curriculum and instruction and are familiar with the local school situation.

The curriculum involves all subjects with the heaviest emphasis being placed upon remedial language and mathematics. Several of the

programmes involved work training and in three cases, the students attended local schools. Only three institutions used correspondence courses, primarily for grade 11 and 12 courses and even in these cases there was considerable dissatisfaction with them. This represented a change from earlier practices and seemed to have occurred for two reasons; the inappropriateness of the courses themselves to meet student needs and the increase in the skills and training of the institutional teachers. The remedial teaching thrust focussed primarily on the core subjects of reading, spelling, writing and mathematics with secondary emphasis on cognitive and social problem solving and life skills. Responses to this question by telephone interviewees are summarized in Table 12.

Insert Table 12 here

One respondent stated that what they did was 'patching' anywhere and everywhere they could.

Table 12

Curriculum Foci in Remedial Education (N = 12)

Foci	Number of Institutions Using	
	Actual Number	Percentage
Reading	9	75
Spelling	9	75
Writing	9	75
Mathematics	9	75
Problem-Solving	8	67
Life Skills	7	58
Vocational Upgrading	3	25
Attitude	2	17
Art, Music	1	8

Most respondents stated that the majority of their students made small gains in their academic skills that often did not maintain once they were back in the mainstream but that a small minority made considerable gains (as much as five grade levels in one institutional year) that did maintain. Standardized tests are used in one third of the institutions with pre and post test evaluation in all skills. There seems to be an increasing move towards this approach to evaluation which probably reflects both greater awareness of the importance of academic upgrading and a general swing across the country to formal testing at the high school level. All respondents use informal assessment and observation of their students' academic and personal behavior. They report improved attitudes towards school while they are in the programme but these too are often not maintained in the community.

In summary then, there are two major programme thrusts evident in Canadian training schools. These are an academic thrust and a personal growth thrust. The academic thrust focuses on basic remedial work and on problem solving of a general cognitive nature directed towards life skills and coping in the future. Sports and crafts are also an important part of most programmes but diet control and medication are infrequently used. Most programmes involve behavior modification as a means of behavioral control and academic motivation. Students spend about four hours daily in the academic part of the school programme and stay in the institution for an average of 9.7 months.

This general programme picture is not very different at least on the surface, from that found in a residential school for learning disabled adolescents. To demonstrate this, the principals of a residential centre

for learning disabled adolescents and of a training school were asked to provide a schedule of activities for one of their typical residents. The principal of the training school had reported earlier that there were no timetabled differences in programme between a learning disabled young offender and other young offenders so the comparison with the resident of the LD institution seemed appropriate in terms of the reality of the training school experience for the young offender with learning disabilities. This is illustrated in Table 13 which compares a typical day in the life of an adolescent in a training school with a typical day in the life of an adolescent in a residential LD school. Both of these schools are located in Southern Ontario.

Insert Table 13 here

Table 13

A Typical Day in the Life of a Young Offender and a Learning Disabled Adolescent

Time	Activity	
	Training School for JD Adolescent	Residential Programme for LD Adolescent
6.45	Wake Up	Wake Up
7.30	Breakfast	
8.00	Duties - tidy up space	Breakfast
8.45		
9.00	School Begins	School Begins
10.30	Recess	
10.45	School	
11.45	Lunch	
12.00		
1.00		Lunch
1.15	School	School
3.30	Free Time, duties life skills meetings	Free Time
4.30		
5.00	Supper	Supervised Homework
5.30	Planned Activities - sports, crafts, 1 hour homework	
5.45		
6.30		Dinner
		Planned Activities - sports, crafts
8.30		
9.30	Ready for bed	Free Time, homework
10.00	Lights out	Bedtime, 13 yr. & under
10.15		
11.00		Bedtime, 14-15 yr.
		Bedtime, 16 & over

As can be seen, the actual days are very similar; each include times for eating, sleeping, school, study, recreational activity, and free time periods. One difference is that caretaking duties are expected of the delinquent adolescent which are not expected of the learning disabled adolescent. Another is the supervised homework period assigned to the LD adolescent. In addition, much of the free time in the LD programme is filled up by tutoring and studying. There is also an active computer programme in the school programme which has had a great affect on competence and attitude towards school. These factors were not mentioned by the principal who described a typical day in the training school programme and although they may be operative there, no respondent to the questionnaire reported any systematic use of computers to aid remedial learning or problem solving.

The next section of this report will look at identification and programming for those with academic retardation and learning disabilities. Responses to these issues will be compared to those given for the overall programme.

Academic Retardation

In the twenty-nine training schools involved in this study, there were 1822 persons or an average of 63 per institution. Of that group 1447 (79%) were males and 375 (21%) were females, a ratio of 5:1. In the clinic population, there were 784 adolescents seen in total or an average of 42 with 667 (85%) males and 117 (15%) females, a ratio of approximately 6:1. These ratios confirm the predominance of males in both the delinquent and learning disability populations noted by Mauser (1977).

Both groups were asked to indicate the number of students in their programmes who were at least two years academically retarded according to the tests they used in their own institutions. The training school personnel reported academic retardation of two years or more in approximately 45 per cent of their students. While the clinic personnel report academic retardation in 60 to 70 per cent of their students. Table 14 summarizes these data.

Insert Table 14 here

Chi square analysis indicates that these differences are significant which would be expected since these clinics serve not only the courts but other agencies and individuals with learning problems. The other very obvious observation to be made is the high incidence of learning difficulties in both populations.

While respondents indicated serious academic retardation among their students, some were reluctant to suggest it was due to a learning disability per se. They suggested that the problems were multifaceted and influenced by a different set of values, one that does not view education as an important part of life, by emotional problems, by poor home environments, poor nutrition, limited intelligence, inconsistent discipline, poor motivation and reasoning deficits. Whatever its cause, academic retardation is a serious problem; one that affects approximately half of the population in training schools across Canada. Whether the cause is inappropriate schooling, poor family background, minimal brain damage, biochemical complications, poor cognitive skills or whatever, the presenting problem is sufficiently serious that it must be assessed carefully if there are to be any changes while the student is in training school.

Table 14

Number of Students who showed Academic Retardation of Two Years or More

Academic	Training School Population n = 1822	Clinic Population n = 784
Reading	45.5% x	63.7%
Writing and Spelling	49.9% x	62.9%
Mathematics	45.5% xx	73.0%

x = $p<.05$

xx = $p<.01$

Learning Disabilities

All questionnaire respondents were asked to indicate if any of the students in their institutions were learning disabled and if so, what percentage according to the following definition:

> "Some institutions distinguish a specific subgroup of their population as having academic problems due to a learning disability. This disability is defined as a discrepancy between intellectual potential (IQ) and academic achievement that is not due primarily to physical, intellectual or emotional problems. It may be caused by neurological or biochemical factors and often shows up as difficulties in the area(s) of visual or auditory perception, language skills, coordination, reading, writing or mathematics."

Among the training school respondents, 96 per cent said they did have learning disabled students at their institution and 77 per cent of the clinic population said they saw learning disabled students. The training schools identified approximately 26 per cent of their pupils as learning disabled or over half of those who were seriously academically retarded while the clinic population identified approximately 15 per cent of their clients as learning disabled which is about one fifth of those whom they reported to be academically retarded. Respondents were not asked how they diagnosed learning disabilities specifically but they were given the above definition and were asked which general methods were most useful in determining whether a youth had a learning disability or not.

Training school respondents stated (in rank order) that observation in their setting, assessment in their setting, previous psychological testing and previous school records were most useful. Clinic personnel found previous psychological testing, previous school records, observation in their setting and assessment in their setting to be most useful. Thus

training school personnel seem to find their own assessment of both a formal and informal nature to be most useful while clinic personnel find previous reports most useful. This difference may occur because of the differential availability of previous assessment. In the interview portion of the study, several respondents stated that many of their residents come from remote parts of Canada where there have been few assessment or programme alternatives available while clinic clients come predominantly from large urban areas that do have a wider range of services to offer the adolescent.

Eighty-six per cent of the training school respondents and seventy per cent of the clinic respondents said they programmed differently for the learning disabled than for other students in their care. These differences are summarized in Table 15.

Insert Table 15 here

The major programme thrusts for both groups are of an academic growth nature. Because only a few of the clinic respondents described their programmes, the range suggested is much smaller than that described by training schools. In the training schools, the predominant curriculum modification involves planning an individualized programme that is based upon each pupil's strengths and weaknesses. This usually translates into remedial teaching in the basic skills of reading and writing and occasionally mathematics. Instructional modifications are not mentioned as frequently but those that are mentioned focus on assignment of the pupil to one teacher who is responsible for coordinating and implementing all aspects of the programme, for example, the 'Prime Teacher' approach at Cecil Facer School. Other curriculum modifications include size of group,

involvement with local school and use of specialized materials. Throughout all academic modifications, there is an attempt to improve attitudes and self esteem but these are seen as complementary to the teaching-learning experience in most cases for the learning disabled delinquent and not as separate from it.

Table 15

Alternatives for the Learning Disabled Population that Augment the Regular Academic Programme

Programme Alternative	Training School n = 21	Clinic n = 5
Academic Growth		
a) Curriculum		
1. Individualized programme based upon strengths and weaknesses	14	2
2. Remediation of basic skills	11	2
3. Vocational Training	3	
4. Art and Recreation	2	
5. Life Skills	2	1
6. Communication	1	
7. Tomatis Electronic Ear	1	
8. Matched to local board curriculum	1	
b) Instruction		
1. Assigned to an individual teacher	5	
2. Small group teaching	3	1
3. One-to-one tutoring	3	2
4. After school instruction	1	
5. Formal identification, placement, and review procedures	2	
6. Attend regular school	2	
7. Liaison with regular school	2	1
8. Specialized materials	2	
9. Lowering of expectations	1	
Personal Growth		
1. Individual Counselling	2	
2. Non-threatening approach	1	
3. Self-esteem, awareness, control	1	1
4. Group Counselling		1

Unique Programmes for the Learning Disabled Juvenile Delinquent

The responses to programme modification for the learning disabled group are in most cases extensions of those in place for all adolescents in the training school programmes. There are however a few programmes that are unique across the country and two of these will be described in this section.

The Step-Up programme in Vancouver has operated for eight years with funding from both the Ministry of the Attorney-General and the Vancouver School Board. Its clientele are adjudicated delinquents who have had an average of 4.7 adjudicated offenses each prior to attending Step-Up. Eighty-eight per cent have a learning disability as defined by the Canadian Association for Children with Learning Disabilities, and as indicated by a checklist that covers movement skills, visual skills, auditory skills, concept formation and behavior symptoms (Thompson, 1983). There have been 253 graduates of Step-Up (a graduate is a student who has attended fifty days or more). Fifty-three per cent of them had attended special education classes in their communities prior to Step-Up, 64 per cent had failed at least one grade, and their mean age was fifteen years, ten months. The programme offers individualized remedial training for two 2-hour sessions, five days a week. The teaching methods are eclectic and include a modified token economy and any instructional technique that will help the individual learn. Students are tested daily in math, spelling, reference and oral reading with a view to improving previous scores on a regular basis.

The philosophy of the school includes such principles as an appreciation of the relationship between learning disabilities and juvenile delinquency; all behavior is learned; approval should be immediate, sincere

and appropriate; good teachers are of prime importance and each student must be accepted and taught at his/her own level of emotional, mental and physical functioning. The goals and objectives of the programme are as follows:

GOALS

"1. To improve basic academic skills for youth referred by Probation Officers.
2.. To reduce the number of times that the participants are adjudicated delinquent on further offences.
3. To encourage appropriate social development.
4. To demonstrate that, even at adolescence, a remedial school program can successfully rehabilitate students.
5. To provide a positive learning experience for a wide variety of university students whose careers involve working with youth.

OBJECTIVES

1. To instruct each student in basic academic skills to the equivalency of Grade 10.
2. To instruct in job employment skills.
3. To provide work experience with the Step-Up program (office duties, clean-up, etc.)
4. To develop the motivation to learn, to find suitable work, and to remain employed.
5. To measure daily the progress of each student and to interpret that progress to the student as a further impetus to learning.
6. To set up the academic program in such a manner that volunteers can successfully tutor students.
7. To demonstrate, by example, the accepted social behaviour necessary to get along in society." p. 28

There can be no doubt about the success of this programme. In an eight year review that included a questionnaire to the community, to professionals and to the students themselves, the response was overwhelmingly positive. It included comments from the professionals such as good attendance, good attitudes, improvements in self-esteem, excellent one-to-one tutoring, improved academic skills, instilling of a desire to improve further, positive implementation of behavior modification and good

involvement in extra curricular components. Students responded with 'the staff treat you fairly, give you help when you need it, know what you are doing, the programme is trying to teach us academic things we need to know and we are happier than we were at regular school. In terms of what they are actually doing, 106 are working, 50 are at school, 22 are homemaking, 25 are unemployed but not in trouble with the law, four are hospitalized, 2 are deceased, 20 couldn't be traced and 18 are in custody. These data summarize responses from all students who have graduated over the past eight years. The eighteen who are now in custody represent 7.1 per cent of the total group while those who are actively pursuing jobs or schooling represent 70.4 per cent of the population.

A second example of a programme that reaches out to the learning disabled delinquent is that offered at the Bosco Home programme for disturbed adolescents in Regina. At any time there are approximately fifty students in residence, 33 male and 17 female. Approximately 75 per cent of them are learning disabled and about 50 per cent have had delinquent experiences (unfortunately the incidence of overlap was not available). They are tested with an assessment battery that includes observation, the WISC-R, WRAT, Gates-McGinitie Reading, Rorschach and HTP drawings and neurological screening with the Tomatis Listening Tests. The programme employs a holistic/developmental approach within a philosophy of Christian humanism in the broad pluralistic sense. All students are on individualized programmes with the main therapeutic goals being unique to each case. An important factor in treatment is the ability of the students to feel comfortable in school and to move ahead in academic competence as well as to leave the programme with some marketable skills. A major thrust

in the academic programme is the development of listening and language skills and the ability to communicate properly. This is done through the use of the Electronic Ear (Tomatis Programme) and through a therapy programme that focuses on communication skills, self-awareness and self-control. In the school programme, there is a pupil:teacher ratio of 1:4 or 5 and both remedial and life skills training are emphasized. This approach emphasizes the development of good relationships between staff and student plus a growth programme at the academic and personal level that is unique to the individual.

It has been evident to this researcher through the literature review and descriptions of good Canadian programmes that those aspects of a programme which seem most important in the rehabilitation of delinquents who have serious learning difficulties (be they due to a learning disability or combination of many factors) include a highly specialized and individualized academic programme that focusses primarily on remedial teaching of basic skills and secondarily on life skills and recreational involvement. These seem best taught in one-to-one or small group situations by a teacher who is personally responsible for the individual and with whom the student can establish a meaningful relationship. These factors suggest that the most important component in effective programming is an attitude and philosophy that regards the young offender as a person worthy of effort plus adequate training in the academic area.

Chapter 3

Discussion and Perspectives for the Future

In this chapter, the issues of definition, incidence, assessment and programme that have been developed in the previous two chapters will be discussed. Following this, recommendations for the future will be suggested.

Definition of a learning disability has long been problematic. The definition adopted by the Canadian Association for Children with Learning Disabilities is typical of official definitions that include discrepancy, exclusion and central nervous system dysfunction clauses, but it presents problems to those who must use it. The problem lies in the assumption that a learning disability is caused by such central nervous system damage. This ascertion is difficult to prove, partially because the instruments frequently used are not valid diagnostically and those that do show reasonable validity are rarely used because of the expense, time and training involved in their administration and partially because the final validation involves actually looking at the brain which is rarely possible. As a consequence, the working definition for most investigators in the literature ignores the central nervous system dysfunction clause and focuses on academic discrepancy that is not due to primary problems in intelligence, emotional stability, home background or physical handicap. Clinic and training school personnel who participated in this study seemed to concur with this approach to definition. While they were given a version of the 'official' definition, when one looked at how the majority assessed a learning disability, it was primarily with instruments that measured intellectual ability and academic achievement.

In addition to the general concensus on the working definition of a learning disability, there seems to be concensus on existence of two types of learning disabled young offenders. Sawicki and Schaeffer (1979) define those delinquents with mild learning disability as showing academic retardation of a minimum of two years while those with severe learning disability show academic retardation of four to six years. Lambert and Birkenmeyer (1972) distinguished between 'normal juvenile delinquents' who had fairly mild problems and 'emotionally disturbed juvenile delinquents' who had long histories of severe problems. Stephenson (1973) had one hard core group of delinquents who had serious academic and behavioral problems and came from low SES backgrounds and another whose delinquencies were minimal and whose backgrounds were fairly normal, their intelligence was average and their academic skills were only mildly retarded. In the study reported in chapter 2, respondents identified a group of students who were 2 years or more academically retarded and another smaller group that were felt to be learning disabled which also seems to support the existence of two types of young offenders with learning problems. Unfortunately, the specific criteria for the smaller group were not usually given although they were a group who seemed to score badly on a range of psychoneurological indices.

In each case cited, above the mildly handicapped group do suffer academic problems, but these are at a moderate level, the group is fairly large (approximately 45%), and would seem to be assessed and programmed for within the current practices in Canadian institutions. The second group is smaller (approximately 20%), shows greater academic retardation, may show central nervous system or biochemical dysfunction and/or more severe

adjustment problems and seems to need a much more highly specialized approach to assessment and programming (Koopman, 1983; Sawicki and Schaeffer, 1979). The ramifications of two groups will be discussed later in more detail in this chapter.

Incidence has been a major area of concern in the literature and in Canadian institutions. The average incidence figures for the presence of learning disabilities in the young offender population in the literature were approximately 55% with a male:female ratio of about 1:2. The incidence is much higher than that in the general population (3 to 10 per cent) and the male:female ratio is lower than that found in the literature (4:1). In this study, the incidence for academic retardation of two years or more was approximately 46 per cent which is fairly consistent with the literature when this conservative or 'mild' definition of a learning disability is used. However, the incidence figure is reduced to 26 per cent of the population when respondents are asked to differentiate among youth with academic problems using a more stringent definition of learning disabilities. It would appear that professionals who deal with young offenders are able to discriminate between those who are simply retarded academically and those whose retardation is due to a learning disability. The ratio of males to females in Canadian training schools is 5:1 but since respondents were not asked for a male:female breakdown on the learning disability question, it is not possible to say whether this ratio is maintained.

There was considerable consistency in the description of a typical delinquent adolescent in both the literature search and in this study. Descriptors included an inability to solve cognitive or real life problems,

emotional problems, poor understanding of social situations, a tendency to behave inappropriately, low average intelligence, poor motivation and attitudes towards school, and academic retardation. Additional descriptors include a tendency to aggressive behavior and a low SES background (Koopman, 1983; Stevenson, 1973; Murray, 1976; Mauser, 1977).

Assessment usually comprises intelligence tests, academic tests and at least one psychoneurological and/or personality tests. The actual tests most frequently cited in both the literature and this study were the Wechsler Intelligence Scale for Children - Revised (WISC-R), the Wide Range Achievement Test (WRAT), the Bender Visual Motor Gestalt (BVMGT), Peabody Individual Achievement Test (PIAT), Minnesota Multiphasic Personality Inventory (MMPI), and to a lesser extent, the Halstead-Reitan Battery. Observation of behavior and informal assessment of academic work were also used by most respondents in the study. Both groups of respondents, those from the training schools and those from the clinics agreed on the types of assessment and actual instruments that were most useful. This was good to note since both groups provide valuable information to the courts and receiving institutions about the individual strengths and weaknesses of the young offender. The overwhelming concensus among all investigators concerning a core battery of assessment instruments suggests agreement about the utility of some tests, however it also may reflect the paucity of standardized instruments that do yield useful information. Certainly each institution felt the need to supplement the core with informal tests and additional standardized tests of local preference. There does seem to be a need to work within the framework of already accepted assessment instruments and to suggest how they can be used to yield maximum diagnostic

information rather than to recommend instruments that are not in general usage.

The causation issue has not been laid to rest in this paper. It would appear that both learning disabilities and juvenile delinquency are conditions that are influenced by SES status, environmental conditions that are unstimulating and frequently prone to pollution, nutritionally poor diets, social and academic problems and minimal brain damage. These causes however are viewed as important not so much in and of themselves, but primarily insofar as determining them can lead to specific remedial suggestions. Thus, identifying the role played by poor diet is only useful to the extent that one can provide a good diet to the individual and monitor behavior change. Similarly the influence of minimal brain damage on delinquent behavior and learning disabilities seems important to ascertain if knowing that has direct programme payoff. And therein lies the rub since brain damage is by definition irreversible and though Yeudall et.al. (1982) recommends medication therapy, he has not provided empirical support for the efficacy of this approach. Nor has the literature generally been able to show consistent results regarding biochemical approaches to programme especially with adolescent populations. There may be some argument for a better understanding of the individual whom we have identified as minimal brain damaged, but surely the more obvious symptoms of academic retardation, impulsivity, poor SES background would be sufficient to generate sympathy for the individual and an appreciation of his/her need for an appropriate programme (Coons, 1982). I comment on this issue rather harshly because the causation issue has involved the energies of many investigators with rather minimal results. The larger payoffs in

this field seem to come from a careful analysis of academic and social behaviors that can be linked directly to programme goals not from extensive research into causation.

This then leads into the findings concerning programme. Ross and Gendreau (1979) found that no single programme thrust was as useful as a many faceted programme thrust. This has face validity certainly when one appreciates the multi-faceted influences on the young offender. This is supported by descriptions of programme thrust across Canadian institutions. The programme elements that seems to yield best results according to the literature and to our survey are as follows:

1. a behavior modification programme that draws the students' attention to appropriate social and academic behaviors.
2. a nutritionally well-balanced diet.
3. the involvement of the community through liaison with school personnel, through the use of volunteers in the institutional programme and through parent training in effective interaction with adolescents.
4. remedial instruction in language and mathematics that is meaningful to the adolescent.
5. problem solving training of a general cognitive nature which is directed towards life skills and coping strategies.
6. the development of an active recreation programme that involves students positively with their peers and staff.
7. implementation by sensitive, caring individuals who value the young offender and see his or her potential for growth and who are well-trained in their subject and in their ability to match the

individual needs of students to appropriate curriculum and instruction.,

This approach to programme could be implemented either within the training schools or at the community level for both groups of learning disabled offenders. Those whose handicaps are more severe however will need additions to this basic programme. One addition would be a more thorough psychoneurological workup with an instrument or instruments of known validity such as the Halstead-Reitan battery or the Yeudall modification of it. Delinquents who did show evidence of serious minimal central nervous system dysfunction would be more carefully monitored as to diet and perhaps put on medication therapy. In both their school and residential programme, there would be an emphasis on small group and one-to-one instruction with a teacher who would monitor their programme personally and establish a strong affective relationship with them that included good modelling of cognitive and affective behaviors as well as caring (Thompson, 1983; Ross and Fabiani, 1983). These individuals would hopefully also be persuaded to stay in the programme for a longer time in order to teach the remedial skills required, ensure their maintenance and carefully plan and support their re-integration into the community. In this situation, the principle of least restrictive environment might be seen as incompatible with most appropriate programme.

In order to identify the two groups of offenders, it would be important to develop a screening instrument that could be used easily and effectively at the time of disposition. Figure 4 is such a screening instrument.

Insert Figure 4 here

The checklist of behaviors is an amalgum of behaviors that have discriminated among delinquent groups and among learning disabled groups. (Thompson, 1983; Connors, 1968; Kinsbourne and Caplan, 1979, Koopman, 1983). It includes both current and historical information about the young offender. A high score on this instrument would suggest that the young offender had a serious handicap that should be further assessed and that he or she should be offered a programme alternative that would deal with the observed difficulties in a supportive structured manner such as that described earlier. High scores on this checklist should also be drawn to the court's attention, so that judges and other officials will be more disposed to understanding the inappropriate court behavior of some of the youth when it occurred.

Recommendations

This chapter has laid the groundwork for the following recommendations:

1. An attempt should be made to discriminate between those young offenders who have mild learning disabilities and those that have serious disabilities.
2. An initial component of this discrimination would be the development of a screening instrument such as that described in Figure 4. This instrument would be used by court workers in developing the court report and would be available to the judges at the time of disposition.
3. Further research should be done to validate the use of such a screening instrument across the country.

FIGURE 4

YOUNG OFFENDER SCREENING CHECKLIST

BEHAVIORS	YES (2) SOMETIMES (1) NO (0)
A. Current Behavior	
Poor attitude toward school	
Hates reading and writing	
Writes and spells badly	
Fails to finish things	
Easily distracted, short attention span, inattentive	
Poor coordination, clumsy	
Poor memory	
Performance varies, good somedays, poor others	
Has difficulty following directions	
Poor understanding of cause and effect and of significance of consequences	
Restless or overactive, fidgits	
Impulsive	
Disturbs others	
Mood changes quickly	
Easily frustrated	
Lacks insight into behavior of self and others	
Eats a lot of junk food	
B. History	
Has had serious head injury	
Difficult pregnancy and birth	
Has been sick a lot	
Has allergies	
Has a history of school problems	
Has missed a lot of school	
Parent had school problems	

4. Programme alternatives should be explored that include the basic elements outlined earlier. Many of these are already in place across the country but their specific strengths and weaknesses need to be better known so that the courts can match young offender to programme more effectively.

5. Where adequate programmes are not in place locally, however, effort should be made to develop them or to buy them from other ministries or geographic areas where this is feasible.

6. Additional hiring should focus on persons who are sensitive to the needs of this group and who are well-trained and experienced with learning disabled adolescents. Where possible, it should be of persons who will 'go the extra mile' since this population is quite special.

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Appendix A

Instruments Used

THE ACADEMICALLY UNDERACHIEVING JUVENILE DELINQUENT

A Questionnaire for institutions
serving the delinquent population

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A. ASSESSMENT INFORMATION

Please circle the frequency of use and the value to you of each of the following assessment batteries where 5 equals high and 1 equals low.

Frequency of Use (HIGH 5 4 3 2 1 LOW)		Value of Instrument (HIGH 5 4 3 2 1 LOW)	DO NOT WRITE HERE
5 4 3 2 1	1. Bender Visual Motor-Gestalt	5 4 3 2 1	
5 4 3 2 1	2. Detroit Aptitude Tests	5 4 3 2 1	
5 4 3 2 1	3. Draw-a-Person (Family)	5 4 3 2 1	
5 4 3 2 1	4. Frostig Test of Visual Perception	5 4 3 2 1	
5 4 3 2 1	5. Hallstead-Reitan Battery	5 4 3 2 1	
5 4 3 2 1	6. Hearing Tests	5 4 3 2 1	
5 4 3 2 1	7. Informal Assessment of Academic Work	5 4 3 2 1	
5 4 3 2 1	8. Illinois Test of Psycholinguistic Abilities (ITPA)	5 4 3 2 1	
5 4 3 2 1	9. KeyMath	5 4 3 2 1	
5 4 3 2 1	10. M.M.P.I.	5 4 3 2 1	
5 4 3 2 1	11. Observation of Behavior	5 4 3 2 1	
5 4 3 2 1	12. Physical Examination	5 4 3 2 1	
5 4 3 2 1	13. Slingerland Tests of Perception	5 4 3 2 1	
5 4 3 2 1	14. Vision Tests	5 4 3 2 1	
5 4 3 2 1	15. WISC-R	5 4 3 2 1	
5 4 3 2 1	16. Peabody Individual Achievement Test	5 4 3 2 1	
5 4 3 2 1	17. Woodcock Reading Mastery Tests	5 4 3 2 1	
5 4 3 2 1	18. Canadian or Iowa Test of Basic Skills	5 4 3 2 1	
5 4 3 2 1	19. Wide Range Achievement Test (WRAT)	5 4 3 2 1	
5 4 3 2 1	20. Thurstone Flags	5 4 3 2 1	
5 4 3 2 1	21. Stanford binet Intelligence Test	5 4 3 2 1	
	OTHER (please list)		
5 4 3 2 1	22. _____	5 4 3 2 1	
5 4 3 2 1	23. _____	5 4 3 2 1	
5 4 3 2 1	24. _____	5 4 3 2 1	
5 4 3 2 1	25. _____	5 4 3 2 1	

PLEASE INDICATE THE NUMBERS OF THE FOUR ASSESSMENT TECHNIQUES THAT ARE MOST USEFUL TO YOU IN PLANNING FOR THE POPULATION YOU WORK WITH.

1	2	3	4
(most useful)			*(least useful of the 4)*

B. PROGRAM INFORMATION

Please indicate which of the following are parts of your school and/or treatment program.

	YES	NO	IF YES, NUMBER OF HOURS PER WEEK	DO NOT WRITE HERE
1. Behavior Modification	___	___	___	
2. Diet Control	___	___	___	
3. Group Counselling	___	___	___	
4. Hobby and Craft Training	___	___	___	
5. Individual Counselling	___	___	___	
6. Problem Solving Skills	___	___	___	
7. Regular Academic Program	___	___	___	
8. Remedial Teaching	___	___	___	
9. Sports Program	___	___	___	
10. Study Time for Academic Work	___	___	___	
11. Time Out	___	___	___	
12. Family Counselling	___	___	___	
13. Vocational Training	___	___	___	
Other (please list)				
14. _____	___	___	___	
15. _____	___	___	___	

INDICATE THE NUMBER OF THE FOUR TECHNIQUES USED MOST OFTEN IN YOUR SETTING.

1	2	3	4
(most often used)			*(least often used of the 4)*

INDICATE THE NUMBER OF THE FOUR TECHNIQUES YOU FEEL ARE MOST HELPFUL IN REHABILITATING JUVENILES IN YOUR SETTING.

1	2	3	4
(most helpful)			*(least helpful of the 4)*

Continued on Page 3

DO NOT WRITE HERE

C. GENERAL INFORMATION

1. Number of persons in the institution. _____

   Male _____ Female _____

2. Approximately how many hours per day do they spend in

   (a) academic instruction _____

   (b) Vocational instruction _____

3. Approximately how many show academic retardation of two years or more in

   (a) reading _____

   (b) writing and spelling _____

   (c) mathematics _____

4. Some institutions distinguish a specific subgroup of their population as having academic problems due to a learning disability. This disability is defined as a discrepancy between intellectual potential (IQ) and academic achievement that is not due primarily to physical, intellectual or emotional problems. It may be caused by neurological or biochemical factors and often shows up as difficulties in the area(s) of visual or auditory perception, language skills, coordination, reading, writing or mathematics.

   (a) Are any of your students learning disabled? Yes ___ NO ___

   (b) If so, approximately how many? _____

   (c) Please indicate which methods have been useful to you in determining this:

	High				Low
Previous school records	5	4	3	2	1
Previous psychological testing	5	4	3	2	1
Observation in your setting	5	4	3	2	1
Assessment in your setting (please list the instruments used)	5	4	3	2	1
Other (please describe)					
_____	5	4	3	2	1
_____	5	4	3	2	1
_____	5	4	3	2	1

   (d) Do you program for these students differently than you program for other students? YES___ NO___

Continued on Page 4

(e) If yes, would you describe your program.

(f) What percentage of their time is spent in the program described in (e)? _____ ☐☐

(g) Is there anything unique about your population or program that you feel is relevant to the purposes of this questionnaire that I have not specifically asked about?

THANK YOU FOR TAKING TIME
TO COMPLETE THIS QUESTIONNAIRE

THE ACADEMICALLY UNDERACHIEVING JUVENILE DELINQUENT

This research has been funded by the Ministry of the Solicitor-General in an attempt to understand the degree to which juvenile delinquents in Canadian institutions have academic problems, how such problems are assessed and what program experiences are designed to accommodate their needs.

Information of this nature in Canada is non-existant in any thorough, systematic manner and yet is essential if the extent and nature of the issue is to be appreciated. Your cooperation in filling out all or any part of this questionnaire will be much appreciated. All individual responses will be kept confidential. Would you please return it by **November 10, 1983** in the enclosed envelope. Thank you.

C.M. Crealock, Ph.D
Department of Educational Psychology
The University of Western Ontario
London, Ontario

Because of the distances involved, I will not be able to visit many institutions. However, I would like to call some in order to understand more about Canadian programs. Would you please indicate the name and phone number of someone in your institution that would be able to speak with me.

Name _____

Phone Number _____
(area code)

Time most likely to be available

Day _____

Hour _____

Interview Questions

Hello, this is Bea Brewer calling as a follow-up to the research questionnaire on the underachieving juvenile delinquent that you filled out for Dr. Carol Crealock. First of all, thank you very much for filling out the questionnaire. The responses from across the country have been very interesting. Do you have about 20 minutes now to elaborate on some of the issues raised? If not, when could I call you back in the near future?

1. Could you describe the type of person you get in some detail? Probe for intellectual level, attitude about school, behavior difficulties, adjudicated offense, age range.

2. How long do they stay in your institution generally.

3. What are the basic philosophy and goals concerning education at your institution?

4. Could you describe the educational program in more detail? Probe for teaching strategies, pupil:teacher ratio, curriculum (provincial correspondence courses, local board, level of functioning of most students).

5. Does the remedial aspect generally involve teaching of basic skills, teaching of problem solving skills, life skills, etc.?

6. What academic gains do pupils generally make while they are with you in writing, reading and mathematics? When you are assessing pupils, do you do that when they first enter your program, when they leave...

7. You mentioned using observation as a major evaluation approach. Would you describe how this is done? Probe for structured vs. unstructured, length of single observation, frequency who observes, etc.

8. Would you describe your behavior modification approach in more detail. Probe for who is on it, basic behaviors monitored, contingencies or rewards.

9. How many academic teachers are at your institution. What training do they have? (probe for a special education training). Are they ministry employed or contracted through your local school board?

10. Anything else?

Telephone Interview

Number _____

Name of Respondent _____

Date _____

Answers

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.